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IN SEARCH OF A NEW TURKEY IN ARIZONA.

BY E. A. GOLDMAN.

IN DECEMBER, 1899, I was directed to make a trip into the Mogollon Mountains of northern Arizona to secure a series of Wild Turkeys for the Biological Survey of the United States Department of Agriculture. The first of January, 1900, found me outfitting at Winslow, on the Santa Fé Pacific Railway. After some talk with local hunters I decided to go to the Clear Creek country on the north slope of the mountains, chiefly because, as far as I could learn, no one had hunted in that section during the season, while numerous parties had been out in every other direction, and the flocks were said to be scattered and the birds very wild. The services of a local hunter and a camp man were secured and a late start made with a light but strong wagon, and horses which were trained for packing and work under the saddle as well as for driving. Provisions for two weeks were taken, and as we expected to see some snow our outfit included a shelter tent.

The weather had been bright and clear, and the winter so far an open one with little or no snow, but the first day of the new year was raw and cloudy and I was cheered by the prospect of a storm, knowing that after a fresh snowfall it would be comparatively easy to track and overtake the turkeys.

From the railway the road led off to the southwest, across the gray, wind-swept desert, ascending slowly but steadily to Sunset Pass — a gap among some bare, sterile hills which rise a few

hundred feet above the plain as outlying foothills of the Mogollons. A few miles beyond the pass, camp was made for the night at a waterhole among the cedars which clothe the lower slopes of the range.

This section of the Mogollon Mountains is of peculiar formation. It has a northwest and southeast trend and forms here the southern rim of the Colorado Plateau by connecting the San Francisco group with the White Mountains of eastern Arizona. The summit is known locally as the 'rim,' and marks the point from which precipitous 'breaks' lead down on the south into Tonto Basin. Toward the north the slopes are so gradual that in ascending one scarcely realizes that he is entering mountains, and streams heading near the rim, flow northward in parallel courses through deep and often inaccessible box cañons until they emerge on the desert and enter the Little Colorado.

On the second day we continued up the long easy slope along the ridge separating Clear Creek Cañon and some of the upper branches of Cañon Diablo. The weather was beautifully clear and all our hopes for an early storm were gone. As we gradually increased our altitude the panorama of the Little Colorado Valley widened below us, while far away in the northwest, San Francisco Peak, the great landmark of the whole region, rose abruptly into cloudland.

The first turkey tracks were seen in spots of soft soil among the piñons soon after noon and others were crossed at intervals along the road. Late in the afternoon, when near the upper edge of the piñon belt, we entered what was evidently the feeding ground of a large flock, for many tracks were seen crossing the wagon road in several places. This encouraged us to camp near here, and when we came to a trail leading down into Clear Creek Cañon and indicating accessible water, we did so. After a few hasty preparations for the night the camp man was sent to the bottom of the cañon, over a mile away, to water the horses and fill casks for camp use, while the hunter and I started out in opposite directions to look for turkeys. I walked slowly and as quietly as possible through fairly open pine and piñon woods, following a half circular course in order to avoid going too far from camp so late in the day. Many tracks were seen, but none of

them had been made that day. At the end of an hour or so I came to the head of a small side cañon about a mile from camp. The sun had just set and all nature seemed to have gone to sleep. Not a sound broke the stillness except the slight, unavoidable rustling of my own footsteps among the dry leaves. I stopped a moment to listen and had about decided to cut across to camp when suddenly from down the cañon came faint but unmistakable turkey notes which started me on a run in that direction. A few minutes later I cautiously approached the place where probably over 150 turkeys, all females and young of the year, were noisily trying to settle themselves for the night. They occupied the tops of tall pines for about 200 yards along one of the steep walls of the cañon. In many of the trees there were only two or three turkeys, but some of the larger ones, and especially those with many dead branches, contained from five to ten birds. Many of them sat as closely together as possible and constantly craned their necks about, squawking, crowding each other and struggling for places. They flew frequently from tree to tree and sometimes a bird, alighting clumsily on a crowded branch would knock off one or two others and all would fly off noisily to other places. At first the disorder seemed to be general and most of the birds were crowding or being crowded and were uttering loud cries of "quit, quit, quit," with many modulations depending apparently upon the degree of excitement. They rapidly became quieter, however, until by the time it was dark they were settled for the night. When all was still I rose from the cover where I had been hiding and after carefully noting the locality, left the birds undisturbed and picked my way across several small cañons into camp. The hunter came in soon afterward and a comparison of notes showed that we had located the same roost, he having come up the cañon while I went down, and each had decided to watch the birds until dark and not to begin firing without the other. About 9 o'clock we returned to the place. The first few shots, fired rapidly, created a great commotion, and the air seemed to be filled with turkeys flying heavily off in all directions, but there were no outcries and in a few minutes all was quiet, and no more birds could be found. I was satisfied, however, that we had secured as many as necessary for specimens though we did not know the exact number, for some of

them went thumping down to the bottom of the cañon, and others fell at some distance.

At daylight next morning we were again on the ground and found the flock broken up into small parties, which soon left their roosts and went off in various directions. On leaving the trees, the turkeys usually flew two or three hundred yards and then ran rapidly until out of sight. During the following days it became evident that all the tracks seen for several miles about our camp had been made by this flock. No more fresh ones were found in the vicinity, showing that the frightened birds had left the locality at once.

Our lucky night hunt having given us a fine series of females and young of the year we then devoted our attention entirely to the old gobblers. We hunted steadily, day after day, covering the country for miles in all directions without seeing any of the old fellows, but they were in the country and it could only be a question of time until we found them. From the tracks of the different flocks it appeared that the old males were living apart from the females and young. Females and young were seen several times but were not molested. Evidently these birds wander far and wide, for tracks a day or two old were often found along some ridge and no fresh ones were seen in the vicinity for days. It did not appear that the birds returned regularly to the same roosting place. Several old roosts were found, usually among tall pines near the head or along the walls of some side cañon, which were evidently occupied occasionally. None appeared to have been used very long, and at least two had only been occupied once. The birds spent the day wandering over the broad and gently sloping ridges between the cañons and as evening approached worked toward one of the cañons and roosted wherever night overtook them.

Finally on the ninth day, soon after noon I came upon some big gobbler tracks which were evidently only two or three hours old, and decided at once to follow them. There were about fifteen of the old fellows, and in crossing patches of soft soil they left a broad trail which became very indistinct or disappeared altogether on rocky ground. I had gone only a short distance when my hunter, whom I supposed far away, came up. He had found my moccasin tracks following the turkey trail and quickly overtook me.

I was very glad to see him, for it was difficult work, and even with our combined skill in trailing we made slow progress. Sometimes we had no trouble for several hundred yards, then suddenly we came to places where the birds had paused to feed and found they had wandered about in all directions scratching among the leaves. At such places the trail became so involved that it was difficult to find the direction taken when the birds left. When we came to hard or stony places a few misplaced leaves or an overturned stone or stick were the only things to guide us. Where the trail became dim one of us usually went a trifle to the right and the other to the left so that unless the flock changed its course abruptly one or the other was pretty sure to find some signs every few yards. Occasionally we lost the trail altogether and had to go ahead and 'cut for tracks' in softer ground. For awhile the course followed was very crooked and several times it even doubled back and crossed itself, but late in the afternoon it became evident that the flock was working toward a branch of Clear Creek Cañon. Shortly before sunset the trail became so fresh that we kept a sharper lookout ahead, expecting to sight the flock at every moment. It was still proceeding in a leisurely manner, as was plainly shown by the number of places where birds had paused to scratch out deep pits in search for food. At sunset we were quite close to the cañon and I began to fear they would be able to roost before we could overtake them. With the idea that I could hear for a considerable distance the heavy wing strokes they would make in rising to the roost, I decided to go ahead and listen, leaving my companion to follow the trail as best he could. I had only advanced about two hundred yards to some higher ground when I suddenly saw the flock only about forty yards to my left. The birds had not seen me and were walking quietly along in single file, following a course directly parallel to the one I had taken. They presented a fine sight and I was strongly tempted to shoot, but on second thought decided to follow them until they roosted. Moving quickly out of sight into a small arroyo, I ran back a short distance and gave a low whistle, when my companion soon overtook me. Together we followed the birds, using great care not to show ourselves. Food had ceased to interest them, and they were evidently looking for a place to roost. They continued

in single file, pausing occasionally to look warily about, until they reached some high ground overlooking a small cañon along the slopes of which stood several tall dead pines. The leader, a fine old fellow of unusual size, stopped and the rest of the flock came trailing up and gathered in a group, facing the cañon. Several low, tremulous signal notes — *quir-r-r-rt, quir-r-r-rt, quir-r-r-rt*, — were uttered and suddenly they took wing altogether and flew almost horizontally out to the branches of the dead trees. After leaving the ground no sound was heard except the heavy flapping of wings. A few moved into the tops of live trees a short distance farther down, but most of them remained in the dead ones. Their behavior was in marked contrast to that of the females and young. There was no crowding and no confusion, and in a remarkably short time they were settled for the night and all was quiet. From where I was lying their bodies appeared in the gathering darkness like enormous black fruits, outlined sharply against the glowing western sky.

When it had become thoroughly dark, we cautiously approached the trees and I took a stand almost under one containing several birds. They were perched two or three feet apart so that only one could be shot at a time. As we knew the old fellows were very wary we held our guns in readiness as soon as we came within range and prepared to shoot at the first sign of alarm. I sent my companion to the next tree and told him to give a low whistle when he was ready. I held my ten-bore gun leveled at one of the birds, and it began to feel very heavy before the signal was given. When it finally came I fired both barrels in quick succession and was much gratified an instant later to hear a crashing noise among the branches as two fine old gobblers came tumbling down, landing before me with a loud thump. Instantly heavy wing strokes could be heard in all directions as the frightened birds left their perches. My companion had also made successful right and left shots into his tree. After some search we each located and killed another turkey, after which no more could be found. We then gathered the big birds together, swung them well out of reach of prowling coyotes or mountain lions and started for camp. When about a quarter of a mile from the roost I saw by the dim moonlight a dark form among the branches of a big pine. A chance shot was made

at it and I was more than half surprised when another big turkey came crashing down. To reach camp we had several deep, dark cañons to cross without trails, and floundered about finding the usual obstacles, which are unconsciously avoided in daytime but are always encountered at night. We were in a cheerful frame of mind however, and above noticing small bruises and other mishaps. The next forenoon was spent taking pack horses to the roost, by a circuitous route, and bringing our game to camp. In the afternoon we started on our return to the railroad and camped among the piñons. The snowstorm we hoped for until it could no longer serve us, came during the night, and morning found everything white and cold outside our tent. We made a hurried breakfast and after a long drive reached Winslow in the afternoon.

The result of the trip was a series of 13 specimens, including adults of both sexes and the young of the year. When the specimens reached Washington, Mr. Nelson found they represented an undescribed subspecies which he named *Meleagris gallopavo merriami* (Auk, Vol. XVII, pp. 120-123, April, 1900).

Merriam's Turkey ranges in summer over the higher slopes of the Mogollon Mountains. In winter, and especially when snow lies over the summits, the birds move down into the piñon belt where food is abundant. I found them feeding largely on the nuts of the piñon (*Pinus edulis*). According to some of the old hunters they also eat the berries of the cedar (*Juniperus utahensis*), but none were found in the stomachs examined, although the turkeys, just before being killed, had been wandering through the upper edge of the cedars, where the ripe berries were excessively abundant.

GEOGRAPHICAL VARIATION IN ABRASION.

BY JOSEPH GRINNELL.

A STUDY of pertinent material has led me to formulate the following generalizations: (1) That fading of plumage colors proceeds more rapidly in direct sunlight than in the less intense reflected or interrupted light; in other words, that color changes due to fading are far greater in birds of a region of much average daily sunshine, than in one with an extreme proportion of cloudy weather. (2) That abrasion of feathers progresses more rapidly in a dry atmosphere than in a humid atmosphere; for extreme dryness seems to make the finer structures of the feather more brittle. Abrasion in general is from two causes: the attrition of feathers, one against another; and the wear produced by contact with foreign objects. Proposition number two apparently holds good in both cases.

To illustrate, a series of *Cyanocitta stelleri* from the cloudy, humid Sitkan District taken in June and July show but slight traces of wear; while specimens of *Cyanocitta stelleri frontalis* from the arid Sierra Madre Mountains of Southern California taken at the same season are so ragged and faded as to almost completely destroy the fresh fall coloration. Several parallel cases present the same relative conditions; examples at hand from the same two regions are *Junco*, *Empidonax*, *Regulus*, *Certhia*, *Dryobates*, *Melospiza*, and *Hylocichla*.

I am well aware that in the case of birds which live in dense vegetation the nature of the foliage with which they come in contact has much to do with the rate of abrasion, for I have at hand two lots of Song Sparrows taken within three days of each other in June, one from a tule swamp, and the other from a saw-grass swale. The birds from the tules are but moderately worn, while the others are so much abraded on the breast, sides, wings, and tail, as to have lost much of their distinctive coloration. But differences in vegetation, if any exist to such a degree, do not seem to me accountable in the cases cited above; surely not with the Thrushes, Jays and in particular the Flycatchers.

At any rate, however variation in wear is brought about, its

bearing upon the study of subspecies should not be underrated, since differences due to such a factor may be found correlated with different areas in the habitat of a species. The disposition now is to grasp at any perceptible character common to a series of specimens from one locality and to use it to distinguish a 'new' subspecies. I believe the discrimination of even the slightest differences to be of importance. But I would urge that a character which is purely adventitious and due to external causes cannot serve to characterize a *subspecies*; for I believe that a subspecies is an incipient species, and that only what we can judge to be incipient species should be called subspecies. Direct mutilations from external sources must not be confused with innate manifestations, developed from individual variations by natural selection and perpetuated through inheritance. The latter constitute subspecies and species.

I have suggested that variation in abrasion may exist, and that such variation should be discriminated against by those who seek minute color characters. But I do not believe there has so far been much error on that score. Fortunately, color characters are usually accompanied by differences in extent of markings, proportions of measurements, etc. It might be advisable, however, hereafter to use as types of detailed color descriptions, especially in the case of geographical races, specimens having newly-acquired plumages. Colorations at other stages of feather wear might then be intelligibly explained in comparison.

I wish to call attention to one case to which the above remarks seem to apply. A subspecies of the Russet-backed Thrush has been distinguished (*Hylocichla ustulata ædica*), the habitat of which is given as "California, excepting the northern coast; north in the interior to southern Oregon"; etc. The habitat of *Hylocichla ustulata ustulata* is thus restricted to the "Northwest Coast region." I have before me 32 specimens of the Russet-backed Thrush from the Pacific Coast, all collected by myself, as follows: Pasadena (10), Pacific Grove (2), Palo Alto (11), Seattle (1), Sitka (8). These represent habitats of the two alleged subspecies, as defined, by 23 specimens, and 9 specimens, respectively. Turning to the original description of *ædica* (Auk, XVI, Jan. 1899, pp. 23-25), we find it characterized as being similar to *ustulata*,

but with flanks and upper parts paler and less rufescent. It is further explained to be "usually paler than *ustulata*, and has very much less of rufous tinge to the upper surface, including both wings and tail; the sides and flanks are more grayish; the buff of jugulum somewhat paler. Although most of these characters are not entirely constant, typical specimens may be without difficulty discriminated" (!). There is admittedly "no material difference in size"; so here we have to do with color differences only.

In carefully examining my series, as above enumerated, I find that the darkest Sitkan example (No. 1188, June 26) is slightly more rufescent than any from California, while another example from Sitka (No. 1119, June 11) is paler and more olivaceous than any California specimen taken before June 1. The rest of the Sitkan skins (June and July) are all easily matched by as many of the breeding birds taken at Palo Alto in May. The most olivaceous skins I have are Nos. 4748 (June 22) and 4794 (July 10), taken at Pacific Grove, and No. 4277 (June 1), taken at Palo Alto. These are much paler than any from Sitka (except No. 1119), and are correspondingly far more worn. If the Sitkan series is representative of the "Northwest Coast region," I fail to see that they are any darker than California breeding birds at the same stage of abrasion. The greater rate of fading to which California birds seem to be subject, must also come into play, causing a generally paler effect in a large series of summer birds from California. At any rate, judging from my own material I see no evidence of a race '*ædica*.'

Hylocichla ustulata ustulata of the Pacific Coast, *H. u. almæ* from the Great Basin and Rockies northward, and *H. u. swainsoni* of the Eastern province, each possesses distinguishing color characters. Each occupies a separate region in summer, and each seems to follow a separate north-and-south migration route. The conditions governing *H. ustulata*, and *H. aonalaschkæ* (of many recognizable races) seem to consist in a different extent of migration. The former has a long migration route, sweeping south into Mexico early in the fall, and back again late in the spring. The *H. aonalaschkæ* group have a much shorter migration route, some of the races not going south of the United States; and in winter occupying areas nearly as circumscribed as in summer. The less

migratory a species is, the more 'plastic' it seems to be; that is, the more opportunity there is for the peculiarities of faunal areas to become operative factors in evolution.

A LIST OF THE LAND BIRDS OF SEATTLE, WASHINGTON, AND VICINITY.

BY SAMUEL F. RATHBUN.

THE topography of Seattle and the surrounding country is peculiar in many respects, and beyond doubt exerts more or less influence on the birds of the region, particularly in causing many of them to be to a great degree locally restricted.

The city, situated on the shore of Puget Sound, is built on a series of irregular benches, generally trending north and south, which attain a maximum altitude, as shown by the Government survey, of 250 feet above tide water. It is bounded on the east by Lake Washington, a body of fresh water some twenty-four miles in length with an average width of two miles; from this lake eastward the lower foothills of the Cascade Mountains begin. North of and within the city limits are two small fresh water lakes, surrounded by country of a similar character, which continues indefinitely northward. South of the city is a broad expanse of tide flats, lying at the mouth of the Duwamish River, which are now being rapidly reclaimed; a beautiful, fertile and cultivated valley extends up this river for many miles.

Originally the rougher country was clothed with a heavy growth of evergreen timber, principally firs of various kinds interspersed with cedar; many of the former attained a height of 200 to 300 feet. In the bottoms and wetter portions the western maple, elm and alder, with a heavy undergrowth intertwined with vines, thrived luxuriantly, in many places presenting an almost tropical exuberance. As the country has become settled this growth has been cleared away. The change has necessarily influenced the habits of

many species of birds, and in the case of the more social kinds, has increased their numbers.

The climate is mild, with no extreme changes of temperature. I am indebted to the kindness of Mr. G. N. Salisbury, section director of the Weather Bureau at Seattle, for the following report, which shows the general climatic conditions for a period of ten years, from 1890 to 1900.

MEAN TEMPERATURE.

(Fahrenheit.)

Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
40.8°	41.6°	45.0°	49.9°	55.3°	60.0°	64.3°	64.2°	58.5°	51.4°	45.4°	43.1°

Mean Annual temperature, 51.6°.

Mean Summer temperature, 62.8°.

Mean Winter temperature, 41.8°.

Highest recorded temperature, 94°.

Lowest recorded temperature, 3°.

AVERAGE PRECIPITATION, 1890 to 1900.

(Inches and hundredths.)

Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
4.37	3.70	3.12	3.21	2.37	1.58	0.66	0.54	1.78	2.98	5.66	6.24

Average Annual, 37.17.

PREVAILING DIRECTION OF THE WIND.

Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
S. E.	S.	S.	S. E.	S. E.	S.	N. W.	N. W.	S. E.	S. E.	S. E.	S.

These statistics readily show why so many of the species found here remain to a greater or less extent during the winter season. In the case of a few, the number of individuals representing the species is quite large.

The following list of species has been compiled from notes taken by the writer during a period of over eleven years. It represents many days of field work, and nothing has been assumed. The sole aim has been to prepare an accurate list, as far as possible, of the land birds, and although the author is aware that the list may be

increased to some extent, only those species have been enumerated of which there is indisputable evidence of their presence.

The nomenclature used is that of the A. O. U. Check-List of North American Birds. The author desires in this connection to acknowledge the kindness shown him by Dr. A. K. Fisher of the Biological Survey, U. S. Department of Agriculture, for information regarding some of the recent changes in nomenclature.

1. *Colinus virginianus*. BOB-WHITE. — An introduced species. Moderately common and breeds. Resident.

2. *Oreortyx pictus*. MOUNTAIN PARTRIDGE. — Also introduced. Resident, quite common and breeds.

3. *Lophortyx californicus*. CALIFORNIA PARTRIDGE. — Another introduced species, resident and breeding. Common.

These three partridges are mostly restricted in their range to favorable localities, and have rapidly increased since their introduction, having been well protected by suitable legislation.

4. *Dendragapus obscurus fuliginosus*. SOOTY GROUSE. — Common resident; breeds.

5. *Bonasa umbellus sabinii*. OREGON RUFFED GROUSE. — Common resident; breeds.

6. *Columba fasciata*. BAND-TAILED PIGEON. — Common, but not as abundant as formerly. Arrives from the south early in May, breeds, and departs early in October. Unless protected by legislation it must eventually become rare, as it is hunted incessantly during its residence here.

7. *Zenaidura macroura*. MOURNING DOVE. — Not an uncommon summer resident in the cultivated valley south of the city. Breeds.

8. *Cathartes aura*. TURKEY VULTURE. — A rather rare summer resident, but of seemingly regular occurrence in the open river valleys and along the sound. Possibly breeds, as it has been observed from May to September.

9. *Circus hudsonius*. MARSH HAWK. — Where the rivers from the Cascade Mountains empty into Puget Sound extensive marshes are formed. Here this species is found moderately common from April to October. Breeds.

10. *Accipiter velox*. SHARP-SHINNED HAWK. — Regular spring and fall migrant.

11. *Buteo borealis calurus*. WESTERN RED-TAIL. — Not uncommon during the migrations; a few pairs remain and breed.

12. *Buteo swainsoni*. SWAINSON'S HAWK. — On March 7, 1892, I saw one of this species sitting in a small tree on the east shore of Lake Washington. It allowed an approach sufficiently near to identify it.

13. *Aquila chrysaëtos*. GOLDEN EAGLE. — In the Cascade Mountains, and east from Seattle 25 miles, I have observed this eagle a number of times.

14. *Haliaeetus leucocephalus*. BALD EAGLE. — Not uncommon along the sound and the larger of our inland lakes. Resident; breeds.

15. *Falco peregrinus anatum*. DUCK HAWK. — Rare, but observed a number of times during spring and fall. (This may possibly be the subspecies *F. p. pealei* Ridgw.)

16. *Falco columbarius suckleyi*. BLACK MERLIN. — On rare occasions I have seen this very dark form of the Pigeon Hawk. Along Lake Washington, on a brushy hillside, interspersed with dead firs, I have observed this bird on the following dates: May 4, 1893; May, 1894; and on several occasions during March, April and May, 1899. On July 10, 1899, I watched one flying about near the business portion of the city, evidently hunting for food. With this exception, my observations were confined to the district above noted, which furnishes a most admirable locality for these birds, and one within which a pair might possibly breed.

17. *Falco sparverius deserticolus*. DESERT SPARROW HAWK. — Abundant from April to October, and restricted to no particular locality. Breeds. Often seen during the winter months.

18. *Pandion haliaetus carolinensis*. AMERICAN OSPREY. — Fairly common summer resident, April to October. Breeds. Not so abundant as formerly.

19. *Asio accipitrinus*. SHORT-EARED OWL. — Rather common during spring and fall around the salt and partially fresh water marshes bordering the sound, especially the river deltas. Observed during summer, and possibly breeds.

20. *Scotiaptex cinerea*. GREAT GRAY OWL. — Rare. Have a skin of an adult female taken within the city limits, Nov. 19, 1899. Another specimen was shot five miles south of the city Nov. 21, 1899. These are the only records I know of this species for this locality.

21. *Nyctala acadica*. SAW-WHET OWL. — Not common. A fine specimen, an adult female, was brought me for identification on Oct. 17, 1901; it had been taken two days previously.

22. *Megascops asio kennicottii*. KENNICOTT'S SCREECH OWL. — Moderately common resident; breeds.

23. *Bubo virginianus saturatus*. DUSKY HORNED OWL. — Resident; breeds.

24. *Nyctea nyctea*. SNOWY OWL. — Rare visitant. A flight of this species invaded the Puget Sound country during November and December, 1896, when a large number of individuals were taken and many more reported as seen.

25. *Glaucidium gnoma californicum*. CALIFORNIA PYGMY OWL. — A not uncommon resident, but seems to be locally restricted. Easily escapes observation.

26. *Coccyzus americanus occidentalis*. CALIFORNIA CUCKOO. — A rare but regular summer resident.

27. *Ceryle alcyon*. BELTED KINGFISHER. — Common resident, but less so during winter. Breeds.

28. *Dryobates villosus harrisii*. HARRIS'S WOODPECKER.—Rather common resident; breeds.

29. *Dryobates pubescens*. DOWNY WOODPECKER.—On Feb. 20, 1892, I took a perfectly typical specimen of this species near the city,—an adult female.

30. *Dryobates pubescens gairdnerii*. GAIRDNER'S WOODPECKER.—Common resident and breeds.

31. *Sphyrapicus ruber flaviventris*. NORTHERN RED-BREASTED SAP-SUCKER.—Not uncommon. Have observed this species during every month of the year except January. Found a pair nesting May 9, 1891.

32. *Ceophloeus pileatus*. PILEATED WOODPECKER.—Resident throughout the year in the heavily wooded tracts. Not so common as formerly.

33. *Melanerpes torquatus*. LEWIS'S WOODPECKER.—This characteristic species is a moderately common summer resident, and breeds. Evinces a partiality for the burned-over tracts where some dead timber remains standing, and appears to be quite generally and not locally distributed.

34. *Colaptes cafer saturator*. NORTHWESTERN FLICKER.—Resident and breeds. More common from March to November.

35. *Chordeiles virginianus henryi*. WESTERN NIGHTHAWK.—An abundant summer resident. Breeds.

36. *Cypseloides niger borealis*. BLACK SWIFT.—This species is a common summer resident, but seems to be locally restricted. The last migrant to arrive in the spring, seldom appearing before May 20, and departing from September 10 to 19, the latter date the latest I have noted. A most interesting species, never seen alone or in pairs, but always a number together, hunting their insect food. Union Bay, Lake Washington, on the outskirts of the city, seems to be a favorite feeding ground, and one can be reasonably sure of seeing them there almost any day during June and early July.

On many occasions I have watched these birds circling about above the city, sometimes appearing as mere specks among the lower clouds, and, with the exception of the dark lowery days with rain threatening, they rarely descend below an altitude of 300 to 500 feet.

37. *Chætura vauxii*. VAUX'S SWIFT.—In certain localities common as a summer resident but not evenly distributed. Breeds. Evince a partiality for the streams along which may be found numerous tall dead firs and cedars.

38. *Selasphorus rufus*. RUFOUS HUMMINGBIRD.—Common summer resident, arriving the latter part of March. One of the first of the smaller species to breed, nesting during April and again late in June.

39. *Selasphorus alleni*. ALLEN'S HUMMINGBIRD.—Rather rare summer resident and undoubtedly breeds.

40. *Tyrannus tyrannus*. KINGBIRD.—Rare summer resident and breeds. I found a nest June 14, 1893, and am familiar with two localities where a pair may generally be found throughout the summer.

41. *Contopus borealis*. OLIVE-SIDED FLYCATCHER.—A rather common and evenly distributed summer resident from the Sound to well into the Cascade Mountains. Breeds. Arrives in May, departs in September.
42. *Contopus richardsonii*. WESTERN WOOD PEWEE.—Common summer resident; breeds.
43. *Empidonax difficilis*. WESTERN FLYCATCHER.—A not uncommon summer resident; breeds.
44. *Empidonax traillii*. TRAILL'S FLYCATCHER.—The most common of our Flycatchers, being an abundant summer resident and breeding.
45. *Empidonax hammondi*. HAMMOND'S FLYCATCHER.—A not common but regular summer resident. Have found two nests of this species.
46. *Otocoris alpestris strigatus*. STREAKED HORNED LARK.—Have observed this species on the tide flats south of the city; 30 miles farther south, on the prairie near Tacoma, it is a summer resident, breeding. One riding across that gravelly prairie can commonly hear its peculiar note.
47. *Pica pica hudsonica*. AMERICAN MAGPIE.—Often seen during February, March and April, along the eastern shore of Lake Washington and back to the foothills of the Cascade Mountains, here not far distant. I have never observed it along the west side of the lake, but have seen it in the river valley south of the city.
48. *Cyanocitta stelleri*. STELLER'S JAY.—Common resident throughout the year. Breeds.
49. *Perisoreus obscurus*. OREGON JAY.—Not uncommon during the fall and winter months, evidently moving down from the mountains east of the city, where it is more or less common during the summer.
50. *Corvus americanus*. AMERICAN CROW.—Locally distributed, and not uncommon.
51. *Corvus caurinus*. NORTHWEST CROW.—A common resident along the sound throughout the year. Breeds.
52. *Agelaius phoeniceus*. RED-WINGED BLACKBIRD.—Resident throughout the year, but more common from February to December. Breeds.
53. *Sturnella magna neglecta*. WESTERN MEADOWLARK.—This delightful species is resident to some extent throughout the year, but is especially abundant in the river valleys on the fields and pastures, where it is so common as to impress one with its numbers. As yet it is practically undisturbed, consequently very tame, and seems to be increasing. From February to July a trip to these valleys is a pleasure on account of the number of these birds, all in full song. Its notes are far superior to those of its eastern relatives; one of our finest song birds.
54. *Scolecophagus cyanocephalus*. BREWER'S BLACKBIRD.—Common spring and fall migrant, some remaining during the winter months.
55. *Coccothraustes vespertinus montanus*. WESTERN EVENING GROS-BEAK.—Occasional visitant during winter and early spring. Previous to the winter and spring of 1901, I had met with this species but once near

Seattle, and that record was of only two individuals some six years prior. During the months of February, March and April, 1901, this locality was, however, favored with a visit from this beautiful bird, which appeared in small flocks. The first were noted February 22, and thereafter a number of small flocks were observed throughout the city, up to April 19. I saw them on six different occasions; the bulk of the individuals appeared to be males, some of them being very highly colored; they were in every case tame and unsuspicious.

56. *Carpodacus purpureus californicus*. CALIFORNIA PURPLE FINCH. — Moderately common summer resident and breeds. Arrives in February, departs in November.

57. *Loxia curvirostra minor*. AMERICAN CROSSBILL. — Irregular winter visitant in this immediate locality. In the Cascade Mountains, east of the city, however, from an elevation of 1000 feet upwards, I find this species of common occurrence during the summer months.

58. *Acanthis linaria*. REDPOLL. — An irregular winter visitant.

59. *Astragalinus tristis salicamans*. WILLOW GOLDFINCH. — Not an uncommon summer resident. Breeds. More common of late years.

60. *Spinus pinus*. PINE SISKIN. — A common winter resident, especially abundant during the spring months; have observed them up to the middle of June. By the actions of a few pairs, I am inclined to think that they may have nested.

61. *Poœcetes gramineus confinis*. WESTERN VESPER SPARROW. — Have observed this species on several occasions during the summer in the settled and cultivated valleys near the city and on the meadows and pasture lands.

62. *Ammodramus sandwichensis alaudinus*. WESTERN SAVANNA SPARROW. — Rather common throughout the summer in the same localities as *P. g. confinis*, noted above; have a specimen taken near Seattle in April, 1894, along the shore of Lake Washington.

63. *Zonotrichia leucophrys nuttalli*. GAMBEL'S SPARROW. — One of the commonest and most characteristic of our birds, always arriving in the spring between the 2nd and 8th of April, and is soon scattered throughout the city. Breeds in almost any suitable location; departs in the fall during October.

64. *Zonotrichia coronata*. GOLDEN-CROWNED SPARROW. — A regular spring and fall migrant but not very commonly observed.

65. *Spizella socialis arizonæ*. WESTERN CHIPPING SPARROW. — Rather common summer resident and breeds. April to October.

66. *Junco hyemalis oregonus*. OREGON JUNCO. — Common winter resident.

67. *Junco hyemalis connectens*. SHUFELDT'S JUNCO. — Common summer resident. Breeds abundantly.

68. *Melospiza melodia morphna*. RUSTY SONG SPARROW. — An abundant resident throughout the year. Breeds.

69. *Passerella iliaca unalaschcensis*. TOWNSEND'S SPARROW. — Mod-

erately common spring and fall migrant, the first individuals arriving in February.

70. *Pipilo maculatus oregonus*. OREGON TOWHEE. — Resident throughout the year but more abundant from March to November. Breeds.

71. *Zamelodia melanocephala*. BLACK-HEADED GROSBEAK. — Rather common summer resident, arriving early in May; departs last of September. Breeds.

72. *Cyanospiza amoena*. LAZULI BUNTING. — Not uncommon summer resident. Breeds. More common than formerly.

73. *Piranga ludoviciana*. LOUISIANA TANAGER. — Common summer resident and breeds.

74. *Progne subis*. PURPLE MARTIN. — Common about the business portion of the city from April to September, nesting in the cornices of the buildings and wherever it can find a suitable place.

I have called this *P. subis*, which I believe it to be; it may, however, be *P. s. hesperia*, but specimens are very hard to obtain, as the birds are only found about the business part of the city.

75. *Petrochelidon lunifrons*. CLIFF SWALLOW. — Rather common summer resident; breeds.

76. *Hirundo erythrogastra*. BARN SWALLOW. — Common summer resident; breeds.

77. *Tachycineta bicolor*. TREE SWALLOW. — An abundant resident from early March to October. Breeds.

78. *Stelgidopteryx serripennis*. ROUGH-WINGED SWALLOW. — A rather common summer resident. Breeds.

79. *Ampelis cedrorum*. CEDAR WAXWING. — More or less resident throughout the year. Breeds.

80. *Lanius borealis*. NORTHERN SHRIKE. — An irregular winter and early spring visitant. Was noted frequently during February to April, 1900.

81. *Vireo gilvus swainsoni*. WESTERN WARBLING VIREO. — Common summer resident.

82. *Vireo solitarius cassinii*. CASSIN'S VIREO. — A regular and not uncommon summer resident and breeds.

83. *Vireo huttoni obscurus*. ANTHONY'S VIREO. — Rare. Am aware of only one record for this locality, an adult male taken by myself May 14, 1895, this being, I believe, the first recorded specimen for this State. Dr. A. K. Fisher, however, informs me that a pair, male and female, with nest and eggs, were secured near Tacoma in the early summer of 1896.

84. *Helminthophila celata lutescens*. LUTESCENT WARBLER. — Common summer resident, arriving early in April and departing in October. Breeds.

85. *Dendroica aestiva*. YELLOW WARBLER. — An abundant summer resident. Breeds.

86. *Dendroica coronata*. MYRTLE WARBLER.—A regular and not uncommon spring migrant, associating with *D. auduboni*. Have no fall record.

87. *Dendroica auduboni*. AUDUBON'S WARBLER.—An abundant resident from March until November. Breeds. I have records of this species for every month of the year except January.

88. *Dendroica nigrescens*. BLACK-THROATED GRAY WARBLER.—Common resident from middle of April until October. Breeds.

89. *Dendroica townsendi*. TOWNSEND'S WARBLER.—Rather rare. A fine adult male taken June 4, 1893, and single individuals seen on two other occasions, are the only records I know of for this locality.

90. *Geothlypis tolmiei*. MACGILLIVRAY'S WARBLER.—Common summer resident, arriving early in May; departs in late September. Breeds.

91. *Geothlypis trichas arizela*. PACIFIC YELLOW-THROAT.—Rather common summer resident. Breeds.

92. *Wilsonia pusilla pileolata*. PILEOLATED WARBLER.—Common summer resident and breeds, arriving early in May and departing the latter part of September.

93. *Anthus pensilvanicus*. AMERICAN PIPIT.—Common spring and autumn migrant.

94. *Cinclus mexicanus*. AMERICAN DIPPER.—Common resident along the mountain streams of the Cascade Mountains, from the foothills east of the city almost to the summits. More abundant from March to December.

95. *Thryomanes bewickii calophonus*. NORTHWEST WREN.—Common resident throughout the year. Breeds. On any pleasant day during the winter the song of this species may be heard.

96. *Troglodytes aëdon parkmanii*. PARKMAN'S WREN.—Common summer resident; breeds.

97. *Anorthura hiemalis pacifica*. WESTERN WINTER WREN.—Abundant resident, but more common from October to May. Breeds.

Am inclined to think that this species raises its first brood during April, in the Sound country, and that then the bulk of the individuals retire to the mountains and nest a second time; but its beautiful song may be heard in the low dense woods throughout the summer.

98. *Cistothorus palustris paludicola*. TULÉ WREN.—Common resident from March to November, but quite a number remain during the winter. Breeds.

99. *Certhia familiaris occidentalis*. CALIFORNIA CREEPER.—Observed throughout the year, but most common during spring and autumn. Breeds.

100. *Sitta carolinensis aculeata*. SLENDER-BILLED NUTHATCH.—Have noted this species a number of times, but it is apparently not very common.

101. *Sitta canadensis*. RED-BREASTED NUTHATCH.—Common from September until May. Possibly breeds, as I have noted it during the summer months.

102. *Parus atricapillus occidentalis*. OREGON CHICADEE.—An abundant resident. Breeds.

103. *Parus rufescens*. CHESTNUT-BACKED CHICADEE.—Rather common from October until May. A few remain and breed. I found a nest of this species June 3, 1894, containing almost full-fledged young, and on three other occasions have seen young with the parent birds in June and July.

104. *Psaltiriparus minimus*. BUSH-TIT.—Common from March to November, and individuals can always be found throughout the winter. Breeds.

105. *Regulus satrapa olivaceus*. WESTERN GOLDEN-CROWNED KINGLET.—Common spring and autumn migrant, and many remain during the winter.

106. *Regulus calendula*. RUBY-CROWNED KINGLET.—A common migrant during the spring and fall.

107. *Myadestes townsendii*. TOWNSEND'S SOLITAIRE.—One record of the occurrence of this species for this locality is all I have. On December 25, 1894, I observed one of these birds perched in a small tree in the yard adjoining a house in the residence district of the city. The soft warbling notes of the bird first attracted my attention, and a close approach, within twenty feet, enabled a full identification of the species.

108. *Hylocichla ustulata*. RUSSET-BACKED THRUSH.—An abundant resident from May until early October, breeding commonly in almost any suitable locality. The sweet notes of this bird are heard frequently throughout the less settled parts of the city during its sojourn here.

109. *Hylocichla aonalaschkæ*. DWARF HERMIT THRUSH.—A not uncommon and regular spring and fall migrant.

110. *Merula migratoria propinqua*. WESTERN ROBIN.—Abundant from February until November, and many remain during the winter.

111. *Hesperocichla nævia*. VARIED THRUSH.—Common from October until the end of April. During March and April, 1899, there was an unusual migration of these birds. They appeared to be almost everywhere scattered about the city, running on the lawns and evincing the same fearlessness as the Western Robin. This species may possibly breed sparingly in the Cascade Mountains. On July 30, 1901, while climbing the trail running up the middle fork of the Snoqualmie River, and distant due east from Seattle about thirty miles, hearing the familiar note of this bird, I saw, not twenty-five feet distant, a fine plumaged male, and near by the female. This was not far from the stream. Later the same day, about a mile from this place, I saw another male.

112. *Sialia mexicana occidentalis*. WESTERN BLUEBIRD.—A common species, arriving early in February and departing in November. Breeds abundantly about the city in any suitable locality. This bird has apparently increased in numbers during the past few years.

Passer domesticus. ENGLISH SPARROW.—Prior to the spring of 1897 I had never seen this species in Seattle, but in June of that year I noted

a pair. The following season I saw fourteen; in 1899 this number had increased to about seventy, associating in small flocks. The year 1900 showed an increase, and this season, 1901, it appears scattered about the business part of the city, and although as yet not in such numbers as in the eastern cities, the time seems not far distant when it may be.

THE CACTUS WRENS OF THE UNITED STATES.¹

BY EDGAR A. MEARNS.

WITHIN the United States are three forms of the Cactus Wren, all subspecies of the Mexican *Heleodytes brunneicapillus* (Lafresnaye), occupying, respectively, the coastal region of California, the Texan region, and the arid interior region of the Southwest; and a fourth race is confined to southern Lower California.

Heleodytes brunneicapillus brunneicapillus, first described by Lafresnaye (Mag. de Zool., 1835, p. 61, pl. 47), was supposed to have come from California; but, as the Cactus Wren of the portion of California west of the Coast Range Mountains is different from that east of them, it became necessary to determine with certainty to which form of *Heleodytes* Lafresnaye's name *brunneicapillus* pertains. At my request, in the year 1897 the authorities of the Boston Society of Natural History kindly forwarded the type of *Picolaptes brunneicapillus* Lafresnaye to Mr. Robert Ridgway, at the Smithsonian Institution, and the following are his conclusions respecting it:

"The type of *Picolaptes brunneicapillus* Lafresnaye, which I have been able to compare with an extensive series of specimens from the southwestern border of the United States, does not agree with any specimens from north of the Mexican boundary-line, and certainly is not from California, as alleged. It is much deeper colored beneath than any United States specimen, the sides, flanks and abdomen being deep ochraceous-buff. In this respect it

¹These, the largest of our Wrens, are about the size of the Scarlet Tanager, and in the United States are confined to the tier of States and Territories bordering on Mexico, and to portions of Utah and Nevada.

agrees exactly with a specimen from Guaymas, Sonora (No. 89908, U. S. Nat. Mus., Dec. 11, 1882, L. Belding), and in the coloration of the under parts in general it is practically identical with four specimens from the same locality, though three of these being obtained late in March and therefore in worn plumage have the ochraceous-buff color somewhat paler. The coloration of the upper parts is not materially different from that of another Guaymas specimen (No. 90081, March 26), and far more like it than any two of the Guaymas specimens resemble one another. On the whole, I have very little doubt that Lafresnaye's type came from some part of northwestern Mexico, perhaps from Guaymas.

"Measurements of the type and the four Guaymas specimens are as follows:—

"MEASUREMENTS.

Museum No.	Collection.	Sex and Age.	Locality.	Date.	Wing.	Tail.	Culmen. ¹	Gonyx.	Tarsus.	Middle toe.
2600	Lafr.	—ad.	"California"	—	3.32	3.10	.90	.55	1.09	.72
89908	U. S. Nat. Mus.	"	Guaymas, Sonora.	Dec. 4.	3.20	3.02	.89	.53	1.04	.69
90079	"	♂	" "	Mch. 11.	3.48	3.20	.88	.50	1.09	.72
90082	"	♂	" "	" "	3.40	3.28	.91	.56	1.05	.71
90081	"	♀	" "	" "	3.30	3.08	.87	.52	1.05	.72

It appears from the foregoing that Lafresnaye's *brunneicapillus* is a Mexican form, which, subspecifically restricted, does not enter the United States. The forms pertaining to the region covered by the A. O. U. Check-List should stand as follows:—

***Heleodytes brunneicapillus affinis* (Xantus).**

ST. LUCAS CACTUS WREN.

Campylorhynchus affinis XANTUS, Proc. Acad. Nat. Sci. Phila., 1859 p. 298.

Heleodytes brunneicapillus affinis ANTHONY, Auk, Vol. XII, No. 3, July, 1895, p. 280.

Geographical distribution.—Southern Lower California.

¹"The tip of the maxilla is broken off in Lafresnaye's type; consequently I have substituted for length of culmen in all the specimens the length of the mandible measured from tip to malar apex."

***Heleodytes brunneicapillus bryanti* Anthony.**

BRYANT CACTUS WREN.

Heleodytes brunneicapillus bryanti ANTHONY, Auk, Vol. XI, No. 3, July, 1894, p. 212.

Geographical distribution.—Northern Lower California and southern California, west of the Coast Range.

***Heleodytes brunneicapillus couesi* (Sharpe).**

TEXAN CACTUS WREN.

Campylorhynchus couesi SHARPE, Catal. Birds Brit. Mus., Vol. VI, 1881, p. 196.

Geographical distribution.—Rio Grande region of Texas and adjoining Mexican States, west to the Eastern Desert Tract,¹ south over the Mexican tableland.

***Heleodytes brunneicapillus anthonyi*, subsp. nov.²**

DESERT CACTUS WREN.

Geographical distribution.—Interior deserts of the southwestern United States, south into the Mexican States of Chihuahua, Sonora, and northeastern Lower California (east of the Coast Range).

Type.—No. 132804, U. S. National Museum. Adult male from Adonde Siding, Southern Pacific Railroad, Arizona. Collected February 27, 1894, by Edgar A. Mearns and Frank X. Holzner. (Original number, 10306.)

Characters.—Back and wings pale drab striped and barred with black, the last bars interrupted; intermediate rectrices, except the subterminal white bar, nearly all black. Under surface of body white anteriorly, pale ochraceous-buff posteriorly; chin immaculate; throat and fore part of breast sparsely marked with crescentic black spots; those on flanks, chest, and abdomen small (sometimes obsolete), and more or less linear in the median area.

Measurements of type (adult male).—Length, 220 mm.; alar expanse, 300; wing, 93; tail, 90; chord of culmen, 23; tarsus, 29; middle toe with claw, 26. (Measured fresh by the author.)

¹ For description of the Differentiation 'Tracts' of the Mexican boundary region, see Proc. U. S. Nat. Mus., Vol. XIX, No. 1103, December 21, 1896. (Advance sheets of this paper were published May 25, 1896.)

² Named in honor of Mr. Alfred W. Anthony, to whom ornithologists are indebted for most of the knowledge respecting geographic variation in this species.

Comparisons. — This race is readily distinguishable from the subspecies *brunneicapillus* and *bryanti* by its pallid coloration and mostly black tail. The black spots on the throat are much smaller, and much less numerous; those on the belly and flanks are also fewer. The white striping of the upper surface is much less pronounced; and the crown lacks the rusty tinge.

Compared with the *Heleodytes brunneicapillus couesi* of Texas,¹ the throat has still less of the black spotting, and the general pallor is even more striking, though the pattern of the tail markings is quite similar, except that the upper surface of the middle rectrices is much more conspicuously barred with black, owing to the pale drab coloring of the interspaces, which are narrower and darker than in *Heleodytes brunneicapillus couesi*.

This race needs no close comparison with the subspecies *affinis*.

Remarks. — The Cactus Wrens collected along the lowest part of the Colorado River and on the deserts east and west of it are all typically of the present subspecies, which also occupies the lower two-thirds of the desert slopes of the Coast Range Mountains adjacent to the Mexican border. Slightly different phases of *anthonyi* inhabit the Eastern Desert Tract, and the Elevated Central Tract between the two desert areas on the Mexican line; but all of the Cactus Wrens of the interior region — western Texas to eastern California — are considered as belonging to the present race. Those of the Elevated Central Tract are connectants between the subspecies *anthonyi* and *couesi*.²

Our forms may be distinguished by means of the following

KEY TO THE CACTUS WRENS OF THE UNITED STATES.

- a. Throat white, slightly spotted; under surface of body faintly ochraceous-buff posteriorly. . . . *Heleodytes brunneicapillus affinis*.

¹ The type, an adult female from Laredo, Texas, was collected February 28, 1867, by Doctor H. B. Butcher, and received by the British Museum from the Smithsonian Institution.

² *Heleodytes brunneicapillus obscurus* Nelson (Proc. Biol. Soc. Washington, Vol. XII, March 24, 1898), from the Tableland of Mexico, closely resembles *couesi*, which latter is the most strongly colored form.

- aa. Throat mostly black; under surface of body strongly ochraceous-buff posteriorly.
- b. Coloration pallid; underparts slightly spotted with black
Heleodytes brunneicapillus anthonyi.
- bb. Coloration dark; underparts heavily spotted with black.
- c. Back broadly striped with white; intermediate rectrices plainly barred with white. . . . *Heleodytes brunneicapillus bryanti.*
- cc. Back narrowly striped with white, the stripes being broken up into spots; intermediate rectrices nearly all black, or slightly spotted with white *Heleodytes brunneicapillus couesi.*
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NOTES CONCERNING CERTAIN BIRDS OF LONG ISLAND.

BY WILLIAM C. BRAISLIN, M. D.

Nettion crecca. A number of years has passed since the publication of any record of the European Teal on Long Island. This species is included in Lawrence's 'List' (1866), but is not mentioned by Giraud in his 'Birds of Long Island' (1844). I am able to record two additional specimens for Long Island. These, together with one American Green-winged Teal, were shot by Mr. Sherman Smith of Merrick, on a small fresh-water pond at that place, about a week before Christmas, 1900. These birds were mounted by Mr. Albert Lott, a taxidermist of Freeport; one of them I found recently in Mr. Willis's shop at the latter place and traced the history of the specimens as related, finding the second specimen at Mr. Lott's house. Both are males in fine plumage. They are now in my collection of Long Island birds.

Ardea egretta. Through the courtesy of Capt. James G. Scott, keeper of the Montauk Point Light, I am enabled to record the second specimen of the American Egret which has come under my observation from Long Island (*Auk*, XVII, 1900, p. 67). Capt. Scott informs me that he shot the bird on July 23, 1900, on Oyster Pond Beach (Montauk). The mounted skin is now in the possession of Capt. Jesse B. Edwards, keeper of the Amagansett Life Saving Station, to whom I am indebted for measurements and other particulars concerning the bird. The following data are noted: Length, 39½ inches (dry skin); length of bill, 4½ inches.

Ardea cœrulea, not **A. candidissima**: A Correction. In 'The Auk,' Vol. XVII, Jan., 1900, p. 69, I recorded *Ardea candidissima* from Long Island. The record was due to an error in identification, and should refer to *A. cœrulea*. The two birds to which reference was made were imma-

ture specimens in captivity; and a subsequent spring moult (in March) to the blue plumage, of which I have been fortunately informed by their possessor, Mr. Daniel De Mott of East Rockaway, renders them unquestionably referable to *Ardea cærulea*.

From the present instance, as well as that of their occurrence in the summer of 1900, on Long Island, later referred to, it appears that these birds are apt to occur with us in summer and early autumn in flocks composed entirely of white, or immature, birds. This fact should prevent a hasty inference that any flock of small white herons must be *Ardea candidissima*. Furthermore, unless the conditions for observation were extremely favorable, the dark blue at the tips of the primaries of *A. cærulea* would not be visible. For example, I may cite the fact that in both instances of the occurrence of this species, as related above, the birds secured were described to me by their respective captors as being altogether white, without other color, except as to their feet and bills. I should therefore be unwilling to trust to the color of the wing tips as a field mark. I mention these details in order that they may possibly be of advantage to other observers.

The occurrence of the Little Blue Heron on Long Island in the summer of 1900 is recorded on account of finding an immature (white) bird of this species in the shop of Mr. Willis of Freeport, which had been shot, together with others, on Hempstead Bay. Mr. Albert Lott of Freeport mounted this bird and confirmed the history of it. Mr. Lott thought the bird was brought to him in August, but of the exact date he was uncertain. The gunner who secured this bird stated that there were no darker birds in the flock; that all were white birds.

***Botaurus lentiginosus*.** A Bittern, shot at Rockaway Beach, Nov. 10, 1900, was found on dissection to have been in life a veritable mouser. The stomach contained the remains of at least two meadow-mice, besides other large pellets of fur, in all respects similar to those one finds in the stomachs of owls. In consideration of the fact that the Bittern receives no protection under the laws of our State, this seems worthy of mention.

***Tringa maritima*.** A specimen was shot on Great South Bay by Andrew Chichester, a gunner of Amityville, on Nov. 23, 1899, and sent to me. It was alone, on a bank of sea-weed drift. It is rare on this part of the coast, where the shore is altogether sandy, with an entire absence of the rocks among which it ordinarily seeks its food.

***Strix pratincola*.** I am enabled, through the courtesy of Capt. J. G. Scott, to record an additional specimen of the Barn Owl from Long Island, taken at a point near the locality at which the one I previously noted was secured (Auk, XVII, 1900, p. 70). The present record is that of a specimen shot by Capt. Scott at Oyster Pond, Montauk, Sept. 25, 1900. I have not examined the bird; but his graphic description of the 'Monkey-faced Owl' in question leaves no doubt as to its identity.

***Contopus borealis*.** An additional record for the Olive-sided Flycatcher, rather later than any of the four specimens which I have previously re-

corded (Auk, XIV, p. 99, and Auk, XVI, p. 192), is one taken at Jamaica South, Sept. 26, 1900. This specimen is now in the collection of the Brooklyn Institute of Arts and Sciences.

Quiscalus quiscula æneus. The Bronzed Grackle is rare on Long Island. Its spring and autumnal migrations are ordinarily completed without crossing the island. Extraordinary conditions, high north-westerly winds, for example, may drive it from its regular course. It is not improbable that grackles, sometimes seen here in November, are this form. On Nov. 17, 1900, a flock of six or eight grackles was seen at Jamaica South, feeding in company with many robins, in recently cultivated fields. They were shy, and but one specimen was secured. It proved to be a typical ♀ *quiscula æneus*. I know of but one other specimen of this variety from Long Island. Mr. W. W. Worthington of Shelter Island killed a grackle on June 16, 1886, which was of the same variety. These birds were identified by Mr. Chapman. Almost all varieties of intermediates occur on Long Island, all the breeding birds being intermediates. See paper by Mr. Chapman entitled 'Preliminary Study of the Grackles,' Bull. Am. Mus. Nat. Hist., Vol. IV, 1892, pp. 1-20.

Loxia leucoptera. During the extensive migratory excursions of crossbills down to, and south of, this latitude in January, 1900, White-winged Crossbills were observed at several stations on Long Island. They were seen by the writer in Prospect Park between and including the dates Jan. 11 and Jan. 18. They chiefly frequented the hemlocks. Both dull and brightly colored birds of this species, and also mixed with them some individuals of *Loxia curvirostra minor*, were seen.

Piranga rubra. The Summer Tanager has been taken on Long Island, as recorded in 'The Auk', during the past seventeen years as follows:—At Sag Harbor, Apr. 7; at Bridgehampton, May 1; at Merrick, May 14; (Dutcher, Auk, III, 1886, p. 442); at Manor in April; at Promised Land in April (Dutcher, Auk, V, 1888, p. 18), and at Long Island City, May 15, (Hendrickson, Auk, I, 1884, p. 290). I here record an additional specimen, which was picked up on the beach at Ditch Plain, April 8, 1901. Capt. Scott of the Montauk Point Light secured it from the finder and sent it to me. The stomach was empty except for a little discolored sand. It is remarkable that of the seven specimens, five were from stations at the eastern end of the Island, where migration is normally a week later for land-bird migrants than the western end. The eastern extremity, however, stretches well to sea and is more advantageously situated as a haven for birds driven out over the ocean by storms and seeking land.

The occurrence of this bird on Long Island, instead of a normal extension of the vernal migratory movement, seems to be more the result of weather conditions. They are isolated survivors of coast storms.

On sending the specimen above recorded, Capt. Scott writes me: "It was found on the shore at Ditch Plain on the 8th inst., chilled with cold, after this last south storm."

The early dates on which the birds have been recorded lead one more

readily to conceive that a cause other than a normal migratory movement is responsible for their presence. Of the seven instances, four were recorded in April; two as early as the 7th and 8th respectively. In Chapman's 'Birds of Eastern North America' (1895), p. 317, we find that the Summer Tanager arrives in Florida early in April, and that at Washington, D. C., the first recorded date of arrival is April 28. In 'The Auk', Vol. XVII, 1900, p. 297 (Allison) it is stated that the first recorded date at which this bird has been seen by the writer in spring at New Orleans, La., is April 2. The specimens of the Summer Tanager which have reached Long Island early in April are birds which must have been driven off the coast at points far to the south of the point of arrival; not impossibly while crossing the Gulf, between the West Indian Islands and the Mainland.

Vireo gilvus. Since recording the Warbling Vireo on Long Island, Sept. 16, 1895 (Auk, Vol. XIII, 1896, p. 87), I have observed it every spring and summer near the same locality, namely, just south of Prospect Park near the Ocean Parkway. It probably nested here continuously, and in 1900 I observed the nest, which was in plain sight from the driveway. Not only the nest but the bird upon it could be seen from the ground, and I repeatedly heard the bird and saw the articulating movements of the head and bill as it sang from the nest *while brooding*. The nesting terminated successfully as far as I could determine, though later in the season I failed to visit the locality for a considerable interval. During the summer of 1901, no birds of this species occupied the locality referred to.

Dendroica palmarum. The Palm Warbler was common in the vicinity of Brooklyn in the autumn of 1895. They were noted Sept. 25 to Oct. 7, and several specimens were secured on and between these dates. In habits, these warblers impressed me as being birds more strictly of the open than *D. palmarum hypochrysea*. For example, I did not see them in the woods at any time, while *hypochrysea* is found in such localities at times. I found the Palm Warblers in open pasture fields, in hedges, in isolated trees and on fence posts. Mr. William Dutcher mentions in 'The Auk', Vol. VI, p. 182, a specimen received from Fire Island Light, Sept. 23, 1887. I do not find any other records of this western species on Long Island.

Parus bicolor. The Tufted Titmouse is observed so infrequently on Long Island that it is considered proper to place the following note of its occurrence on record. I heard and saw an individual of this species at Sheepshead Bay on March 14 and 15, 1898. A thick grove of cedars, almost impenetrable in many places by reason of thick underbrush and cat-briar, stands, or then stood, on the edge of the salt-meadows at that place. Here, on the date first mentioned I saw Crows, Goldfinches, White-throated and Song Sparrows, Robins, Purple Grackles, one Red-winged Blackbird, Myrtle Warblers and one Golden-winged Woodpecker. My attention was attracted by the clear, whistled note of what I at once

recognized as the Tufted Titmouse. I heard intermittently for about a quarter of an hour the series of notes, which sound like *pêtel-you, pêtel-you, pêtel-you*, but did not succeed in getting sight of the singer. Wishing to confirm what I considered a rare find for Long Island, I returned the next day. The bird was still there and singing, and without much trouble, by imitating the song, I coaxed him out of the thicket into plain sight. No doubt existed in my mind as to the identification, as I am familiar with the songs of the bird and its appearance in life. Giraud in his 'Birds of Long Island' (1844), wrote as though *Parus bicolor* were common at that time. It is also included in Lawrence's 'List.' But one specimen, bearing no date, is extant in the Long Island Historical Society's collection (Dutcher, Auk, X, 1893, p. 277). I consider it a very rare straggler on Long Island.

INDIVIDUAL, SEASONAL, AND GEOGRAPHICAL
VARIATIONS OF THE AMERICAN GOLD-
FINCH (*ASTRAGALINUS TRISTIS*).

BY JONATHAN DWIGHT, JR., M. D.

LINES of least resistance are those most naturally followed, and there is perhaps no line of ornithological investigation easier than discovering differences of color and size that can always be seen in series of skins laid out before our eyes. But, heretofore, the tendency has been to look for geographical variations, and consequently almost every North American species has been gradually split up into geographical races as fast as enough specimens from one part of the country have been gathered for comparison with those from another. Major differences have already been recognized and we now seem to be fast approaching a point where individual variation is likely to prove greater than the minor differences, that pass as subspecific characters. When these consist only of slight variations in depth of color and millimeter differences in dimension, it is indeed a wise describer that knows his own race when the labels of locality are removed. My contention is that unless these geographical variations are appreciably greater than those common to the species there is small reason for 'splitting,' however much this may redound to the describer. I believe, too,

that a better understanding of individual and seasonal variation in recognized species will do much to remedy a growing evil that, whatever its cause, is greatly to be deplored. If, eventually it becomes both necessary and proper to recognize by a name every minor variation due to environment, it seems desirable, first of all, to learn how much of it is individual and how much seasonal, so that the value of the geographical element remaining may be better characterized. This is no simple matter, but one involving more tedious comparisons of plumages and measurements than are required in the mere naming of races.

In order to show how great may be the variation in a single species, I have selected the American Goldfinch (*Astragalinus tristis*) as being peculiarly suitable for the purpose. It is widely distributed over North America, and being to a certain extent resident wherever found, its races, of which two have been described, ought to show marked characters, while individual variation ought to be very little. This does not seem to be the case, for the subspecific characters are slight, while individuals differ widely in both color and size. The seasonal variation in plumage is considerable, there being no less than six plumages easily recognizable in the male, and although most of the feathers are renewed by moult twice in the year they are subject to a large amount of fading and actual loss of substance.

The two geographical forms are *pallidus*, a large pale bird from Arizona described by Dr. Mearns (Auk, VII, 1890, p. 244), and *salicamans*, a small dark bird from southern California described by Mr. Grinnell (Auk, XIV, 1897, p. 397). A small series of *pallidus*, including the type, has been available at the American Museum of Natural History and Mr. Grinnell has kindly loaned me a series of eighty specimens of *salicamans*. These have been compared, plumage by plumage, with over one hundred specimens of *tristis* in my own collection. The variations in dimensions have been tabulated, and those of color may be found under the different plumages, which I have designated in numerical sequence.

Several new facts are brought to light by the study of this material. It appears that adults have, on an average, appreciably longer wings and tails than young birds and that each loses in the course of a year through wear an appreciable amount of this

length, the loss being greatest in young birds. These facts are true of other species than the Goldfinch, and their importance is obvious if races are to be established on minute differences of dimension; for if by any chance a series of young birds, for instance, should be compared with adults of a supposed new form, the differences in the new form would be magnified out of proportion to their value. Furthermore the element of wear complicates the question unless absolutely comparable series of equally worn birds are available. True, these differences are extremely small and only to be made out by average measurements of series, but it is on just such small variations that races are now founded, hence the need for a better understanding of seasonal variation in dimension.

Seasonal variation in color is due to moult and subsequent fading of the plumage. Probably no colors are more susceptible to fading than the browns and the buffs, and therefore the Goldfinch, particularly in winter dress, varies between wide extremes on the Atlantic coast, but fades less on the Pacific. Specimens show that *tristis* and *salicamans* are equally brown after the postnuptial moult, the drier, brighter climate in the East fading *tristis* quite rapidly in the subsequent months, while *salicamans* remains dark. This may well raise the interesting question whether geographical races may be separated on mere fading. It seems to me they should be independent of accidents of moisture and sunlight, otherwise an unusually wet or dry season anywhere would produce temporarily a dark or a light race, as the case might be. The evidences of climatic influences ought to be found in fresh plumages if they are to be of any value. It is unfortunate that the type of *salicamans*, taken December 21, should be a more or less faded winter bird, for individual differences in plumage are greater in the brown winter dress than in the more stable yellow of the summer months.

The earlier moult of western birds is a matter that has never been considered in its possible bearing upon the fading of plumage. The series of *salicamans* shows that the moults of the California bird take place a month or two earlier than in eastern *tristis*. Comparable birds in fresh plumage are therefore naturally September *salicamans* with November *tristis* and, except for the evidences of fading which survive the prenuptial moult, average March *salicamans*.

camans with May *tristis*. Another interesting fact in connection with the feather changes of *salicamans* is the more limited prenuptial moult. While in *tristis* this involves almost the entire body plumage, in *salicamans* it frequently stops short of the renewal of feathers at a number of points, so that the persistent old feathers, especially in females, tend to produce a brownness that is lacking in the yellower eastern birds.

Having thus briefly reviewed some of the salient features that should be considered in studying variation, we may now examine at some length the details of plumage and the plumage changes in the Goldfinch.

1. *Natal Plumage*.—This ephemeral first stage of plumage is largely acquired before the chick is hatched and consists of a few long downy filaments known as neossophtiles. It would be interesting to make comparison of geographical races at this early period, but material of this sort is sadly lacking. The neossophtiles are in direct continuity with the feathers of the next generation and are lost, even before the nest is deserted, through the post-natal moult.

2. *Juvenal Plumage*.—This is commonly known as the nestling or 'first' plumage. It develops rapidly; the chin and sides of head being the last areas to be clothed, and the body feathers are worn but a short time before they are replaced through the postjuvenal moult. The feathers of this second stage have been called mesoptiles, in distinction to those of later generations which are known as teleoptiles. In males of *tristis* the upper parts are uniformly bistre, shaded with deep wood-brown, and generally there is a faint greenish or yellowish tinge. The abdomen is primrose-yellow; breast, sides, and crissum washed with ochraceous-buff. The chin, throat and supraloral region are pale olive-yellow of varying intensity and extent. The wings and tail are black; the wing-coverts, tertiaries and secondaries broadly edged with ochraceous-buff or clay-color, the edgings forming two wing bands at tips of greater and median coverts, the distal feathers being whiter. Several primaries are basally white, the spot showing beyond the primary coverts. The terminal third of each rectrix is dull white on the inner web.

Aside from variation in the original depth of the browns and

buffs, the shade of these colors depends much upon the length of time the plumage has been worn. In the vicinity of New York birds are not on the wing before August or September, depending upon the hatching of the individual, and this plumage is worn until the end of October or the beginning of November. The female is similar to the male, but the wings and tail are of a duller black, the tail blotches brownish white and in no contrast to the dark parts of the webs, and the yellow tinge of the lower surface is less distinct, restricted to the chin or lacking. A few deep-colored females cannot be distinguished from the duller males. In matters of dimension, the tarsi and toes quickly reach their full size, followed by the wings and tail, while the bill is of slower growth. The average dimensions are somewhat smaller than in adults a year or more older.

I have seen no specimens of *pallidus* in this plumage.

The young of both sexes of *salicamans* in this plumage are not darker than eastern birds at a corresponding stage, but they are usually more suffused with yellow, especially below. Specimens from the end of May to the end of August, are comparable with September to November *tristis*, on account of the difference in the hatching season of eastern and western birds. The wing-edgings of *salicamans* are scarcely, if any, broader on an average than are those of *tristis*, and their color is identical. Females of course average duller than males. Individual variation and fading are, however, responsible for greater differences than may be satisfactorily established between the two races, for when eastern and western specimens are mixed together it is impossible to separate even a majority of them without looking at their labels.

3. *First Winter Plumage.*—In *tristis* a partial postjuvenile moult, confined to the body and the lesser (rarely the median) wing-coverts, takes place during September or October. The wings and tail are not renewed and their edgings, through rapid fading, become a pale buff even before the moult is completed.

In males the new brown of the upper parts is deeper than that of the juvenile plumage and strongly suffused with olive-yellow on the head, often faintly tinged elsewhere, and there is a grayish collar visible on the neck; the upper tail-coverts are smoky gray with wood-brown edgings; sometimes the rump is tinged with

yellow and sometimes not. Above, the plumage, although much darker, resembles the juvenal, while below it is much paler than the juvenal, the abdomen and crissum being dull white, the breast a brownish olive-gray and the sides and flanks strongly washed with wood-brown, while the yellow of the throat is brighter and more extended. Some specimens, however, are everywhere suffused with yellow, which extends further on the breast, and are hardly to be distinguished from adults, except by the lesser coverts, which are dull black with olive-yellow or greenish edgings. In adults these coverts are chiefly canary-yellow.

The browns and buffs fade so rapidly that in a few months the upper surface usually changes from a deep sepia to a pale hair-brown, the unprotected wing-edgings bleach nearly to white, and the wash on the sides becomes scarcely perceptible. The wing-edgings pale earlier than the back or sides where the feathers are newer, usually becoming white, often by the end of January, while the brown of the back does not become decidedly grayish until April. A few resistant April birds are found, however, that are almost as brown as November specimens, and birds taken on the same day during the winter months will vary widely in tone, owing no doubt both to the different periods at which their plumages were assumed and to individual variation in original color and in resistance to exposure.

This plumage is worn for about five or six months, and although the beginning of the prenuptial moult is seen sometimes as early as the end of January, it is usually the end of March or beginning of April before the feather-tracts show much activity. The gradual creeping in of new feathers is perhaps most conspicuous on the head, but it occurs at all of the customary points of outbreak as outlined in my earlier papers on moult.

In the female of *tristis* a partial postjuvenal moult takes place, as in the male, from which the female is distinguishable chiefly by the retained dull wings and tail of the juvenal dress. The yellow of the new feathers on the chin is duller than in the male and restricted to a smaller area, less often suffusing the head or adjacent parts. The browns are a trifle duller. The lesser wing-coverts often remain brown or assume only a faint greenish tinge. Otherwise females resemble males during the winter, their pre-

nuptial moult occurring somewhat later than in males and being as a rule less extensive.

The series of *salicamans* contains no bird in freshly acquired winter plumage although some end of August specimens, still in juvenal dress, show a few new feathers. This indicates an earlier postjuvenal moult in the California bird, just as a specimen of January 9 indicates an earlier prenuptial moult. This bird is already yellowish from an admixture of new nuptial feathers and has lost much of the buff of the wing-edgings through fading. Six specimens of the equivocal date "3/1/97" have also begun the prenuptial moult but are grayer and more worn, a good part of the edgings having disappeared. Specimens of February 6 and March 23, scarcely differ from the January bird except that the nuptial black and yellow is well advanced. The January bird is absolutely indistinguishable from the yellower January specimens of *tristis*, and the March *salicamans* are the counterparts of the browner March and April specimens of *tristis*. Comparable specimens of *tristis*, owing to the later moults, ought to be those of a month or two later than specimens of *salicamans*, if both forms faded at the same rate. This does not seem to be the case, for *salicamans* from January to March appears to fade very little, whereas *tristis* usually becomes much grayer in a like time. Still it is perfectly possible to pick out a light and a dark series of *tristis* in any winter month that will show more constant average differences than winter *salicamans* does from *tristis*. It might be said a first winter *salicamans*, on account of yellowishness, most resembles a second winter *tristis*, but there are many exceptions, and the differences are really extremely slender. Females show these variations as well as males, *salicamans*, between December and March, fading less than *tristis* in like period, and the difference is noticeable chiefly in the browner sides and flanks of *salicamans*. Eastern and western birds therefore may be said to acquire at the time of moult plumages of the same color which vary later through fading alone. It is unfortunate that a male taken December 21, should have been selected as the type of *salicamans*. The bird is probably like the January 9 specimen, a faded first winter plumage, because the lesser coverts are described as 'olive-green.' Types ought to be fresh-plumaged birds.

A few specimens of *pallidus*, chiefly females, do not permit of very definite conclusions.

4. *First Nuptial Plumage.* — In *tristis* the prenuptial moult of males is generally completed early in May, being confined to the body feathers. The new plumage is canary-yellow with a black cap. The wings and tail are left over from the juvenal stage, while a few tail-coverts, abdominal and crural feathers, together with the lesser wing-coverts (sometimes however renewed at this moult), remain of the first winter dress. Thus, the first nuptial is really made up of parts of three plumages. It is worn four or five months and only towards the end of this period do the ravages of feather disintegration or abrasion become very marked. The edgings of the juvenal feathers gradually disappear leaving the wings and tail black except for the white tips of the secondaries. The remiges and rectrices themselves become more or less ragged; those of young birds being less resistant to wear than those of adults. The tables of measurements show that wings and tail through a year's wear lose about 3% or 4% in their length. As the actual breeding season, in July and August, advances, the yellow plumage acquires a greenish or citron-yellow tint, due in part apparently to the exposure of some of the grayish basal portions of the feathers. The yellow itself fades little if any.

In the female of *tristis* the prenuptial moult is not as extensive as in the male, less often extending to the abdomen and rump, and occurring a few days later in the spring. There is no black cap, and the lower parts, with sides of head and rump, are citron-yellow, brownish tinged on the sides, and becoming a brown tinged olive-green on the back.

The prenuptial moult of *salicamans* differs from that of *tristis* in two important particulars. In the first place, it occurs earlier by fully a month or more, and in the second, it is on an average much less extensive. As a result of the limited moult males often retain the brownish feathers of the winter dress, at points where they are completely renewed by yellow ones in *tristis*, while females retain many more old feathers than do the males. Consequently the yellow of males is obscured, especially on the nape, scapulars, rump and flanks, by the mixture of old and new feathers that give a dark or greenish effect, while in females the much

greater number of old feathers retained makes them appear darker and browner than eastern *tristis*. The less faded sides also enhance the dark effect. A large series of both sexes shows this clearly, and on account of the preponderance of old feathers in females they suffer far more from wear than do females of *tristis*. Both males and females of *salicamans* therefore usually become more worn than *tristis* in summer or breeding dress; and furthermore, in comparing specimens, allowance must be made for the earlier acquisition of this plumage in *salicamans*. Consequently a series of *salicamans* taken late in May are comparable to July or August birds from the East. The prenuptial moult in each form is practically completed a couple of months earlier than these respective dates, although the moult lags in the California bird, as it is wont to do in birds of a warm climate. There seems to be no real difference in the yellow of the two races except that possibly on an average there is a shade more of depth in *salicamans*, just as there is a yellower tone in other plumages. It is *salicamans* that has the yellower and *tristis* the greener tinge when perceptible, but the shade of difference is so slight and so inconstant that only in large series is it possible to recognize it. The black cap in *salicamans* seems to average smaller and is more variable in extent. Two specimens have only a few black feathers, the rest of the head being yellow, a condition not contingent on the extent of the moult, which evidently has been fairly complete. No *tristis* approaches these birds, although the black cap is diminished in size through wear.

I have seen no specimens of *pallidus* in first nuptial dress.

5. *Second Winter Plumage.* — Both sexes in all forms of the Goldfinch undergo a complete postnuptial moult which in *tristis* occurs in September or October. The first signs may appear in males as early as the second week in September, and it is usually completed by the middle of October or first of November. The whole plumage averages richer in color than that of the first winter, with a yellower suffusion, especially of the head and rump, the browns are deeper, and the wings and tail blacker. The outer greater coverts are whiter and the white spot at the base of the primaries, if present at all, is much reduced, not showing beyond the primary coverts. But the only constant differential plumage

character by which adult males may be distinguished from young males is found in the lesser coverts or 'shoulders' which with the median coverts are bright canary-yellow. In some specimens the lesser coverts are greenish tinged, being dusky basally, and there is much white in the median coverts. Such birds usually show a white spot on the primaries, while the yellower-shouldered birds do not, but whether they represent the second winter and the others the third or later winter plumages, I cannot say. Osteological characters show that none of these are of the first winter, although some resemble very closely bright colored young birds. The same influences of wear produce the same effects in adults as in young birds, bleaching them rapidly during the winter months. There is great variation in winter specimens, whether of the first or later winters, also there are age variations from winter to winter, and the individual resistance to fading varies, but all these variations so overlap that it is hardly possible even with large series to establish which of them has been most potent in any given case. At about the same time as in young birds, or usually a little earlier, the second winter dress begins to be replaced by the second nuptial.

The postnuptial moult in the female occurs a little later than in the male who is not occupied so long in caring for the brood. The differences between first and second or later winter plumages are relative, and, although the colors appear to average deeper with age, the age of a specimen may only be told with certainty by osteological characters. The lesser wing-coverts are more frequently greenish in adult females.

The postnuptial moult of *salicamans* begins fully a month or two earlier than that of *tristis*. Two ragged males of August 12, evidently passing from first nuptial plumage, have acquired three new primaries, a few tertiaries and wing-coverts and some of the body plumage, while a specimen of August 27 (probably a year or more older than the much worn birds just mentioned) is further advanced, having six new primaries, and four pairs of rectrices and much of the new body plumage and coverts. Comparing these birds with September or October specimens of *tristis* just completing the moult, I find that the browns are equally dark and apparently the two forms indistinguishable at this stage. As in *tristis*,

the California bird wears this plumage for three or four months before the second prenuptial moult begins. September, October and November are unfortunately not represented in the series of *salicamans* except by one bird of November 27, already showing evidences of the nuptial dress by a few black feathers on the crown and yellow ones elsewhere. Just as in *tristis*, the California bird of the second winter has the wings and tail slightly longer and the plumage somewhat richer than that of the first, and with the yellow of the lesser wing-coverts in males the distinguishing character. The bird of November 27 and two of December 5 have lost the buff of the wing edgings, and have faded somewhat on the back and sides, but the incoming of the yellow nuptial feathers already obscures the winter colors and many black feathers of the crown have appeared. I think that some of them have come in at the postnuptial moult, as this sometimes occurs in eastern birds. Specimens of February and March are, as a rule, so little paler than those of December, that the winter fading must be less than in *tristis*, presumably comparable *tristis* of March and April being nearly all of them grayer. A number of April *tristis* with new yellow and black feathers mixed with the winter dress are, however, absolutely indistinguishable from *salicamans* at like stage of the moult, and the variation between winter specimens of *tristis* is so great that it is easier to sort out on like dates a light and a dark race than to distinguish even a majority of *salicamans* as markedly different. Similar conditions prevail among the females. Both sexes do appear to be darker at the beginning of the prenuptial moult than *tristis*, but apparently only because they have faded less and show a yellower tinge in their plumage.

The male winter type of *pallidus* (Amer. Museum No. 52667, January 20) is of course a faded bird, but it seems to be large and pale with very broad edgings. A few December birds resemble it and a bird of March 6 has begun the prenuptial moult. Several females, apparently adults, are not so much paler than *tristis* as might be expected, but the material available is altogether too scanty to arrive at very satisfactory conclusions.

6. *Second Nuptial Plumage.*—The second prenuptial moult of *tristis*, like the first, is partial; affecting only the body plumage. There seems to be little or no appreciable difference in the inten-

sity of the yellow of successive nuptial plumages of males, although the depth of color varies somewhat according to the individual. There are lighter and darker first nuptial plumages and similar second or later nuptial plumages, but the variation in shade of color between deep canary and pale lemon-yellow is surprisingly small. The lesser wing-coverts serve to distinguish young breeding birds from adults.

The second prenuptial moult of *salicamans* probably averages more extensive than the first. A grayish collar on the nape is usually the last relic of the winter dress, but the yellow may be considerably obscured by old feathers elsewhere. The end of March usually finds *salicamans* in nuptial dress, although there is evidently great individual variation in its time of completion. If the growth of plumage continues into the breeding season as observed by Mr. Grinnell, it is a condition that is not found in *tristis* although not without a parallel in other species of birds. April is not represented in the series examined, but the birds of late May seem to have completed their moult a good while before.

The type of *pallidus* (Amer. Museum No. 52666, ♂, May 3) is a bird of the second summer or older. It is large, with a long tail, and shows much white edging, but I do not consider it of a paler yellow than *tristis*, and it would be hard to pick it out of a series of *tristis*.

The measurements in Table I show variations in dimensions due to sex, to age, and to season, *tristis* being contrasted with *salicamans*. As all the measurements are mine they are strictly comparable. The wing is measured with dividers from the proximal end of the carpo-metacarpus to the tip of the longest primary, *i. e.*, the eighth enumerating from the wrist outward; the tail from the point of insertion of the middle pair of rectrices into the skin to the tip of the longest, *i. e.*, the outer pair; the tarsus and middle toe along their greatest anterior length; and the bill along the chord of the culmen and also its greatest depth.

TABLE I.

MALES.

SPECIMENS	PLUMAGE	WING	TAIL	TARSUS	MIDDLE TOE	CLAW OF MIDDLE TOE	BILL (exposed culmen)	BILL (depth at base)
5 tristis	Juvenal	Aver. Max. Min. mm. mm. mm.	Aver. Max. Min. mm. mm. mm.	Aver. Max. Min. mm. mm. mm.	Aver. Max. Min. mm. mm. mm.	Aver. Max. Min. mm. mm. mm.	Aver. Max. Min. mm. mm. mm.	Aver. Max. Min. mm. mm. mm.
5 salicamans	"	66.8 70.9 68.6	47.5 48.3 46.2	12.9 13.5 12.2	10.2 10.7 9.4	4.6 5.3 3.8	8.1 8.9 7.4	5.8 6.1 5.3
24 tristis	1st Winter	67.6 69.3 65.0	45.7 48.8 41.1	13.2 13.7 12.7	10.7 11.2 10.2	4.3 4.8 4.3	8.9 9.6 8.1	6.1 6.3 5.8
9 salicamans	"	70.1 73.7 66.5	48.3 49.8 44.4	13.2 13.7 12.7	10.5 11.2 9.9	4.6 5.3 3.8	9.1 9.9 8.4	6.1 6.6 5.8
13 tristis	1st Nuptial	67.8 69.1 66.8	46.5 49.8 44.7	13.2 13.7 12.7	10.7 11.2 10.2	4.6 4.8 4.3	9.1 9.9 8.6	6.1 6.3 5.8
20 salicamans	"	69.1 71.1 66.3	46.7 50.3 44.4	13.2 13.7 12.7	10.7 10.9 10.2	4.6 5.1 3.8	9.4 9.6 8.6	6.1 6.3 5.8
16 tristis	2d Winter	67.3 69.1 65.5	46.0 47.2 43.2	13.2 14.2 12.7	10.4 11.2 10.2	4.6 5.1 4.1	9.4 10.7 8.6	6.3 6.9 6.1
14 salicamans	"	71.6 73.7 69.6	50.0 52.1 48.3	13.4 14.2 12.7	10.7 11.2 10.2	4.8 5.6 4.1	9.4 9.6 8.6	6.1 6.6 5.8
8 tristis	2d Nuptial	69.8 72.6 67.6	48.8 50.3 46.2	13.2 13.7 12.7	10.4 10.9 9.6	4.8 5.3 4.1	9.6 10.2 8.9	6.3 6.6 5.6
6 salicamans	"	70.6 72.6 68.6	47.7 50.8 44.7	13.5 14.0 12.7	10.4 10.7 10.2	4.8 5.3 4.3	9.4 10.2 8.9	6.2 6.6 5.6
66 tristis	"	67.8 69.1 66.5	47.0 49.0 43.9	13.2 13.7 13.0	10.5 10.9 10.2	4.8 5.1 4.1	9.1 9.6 8.6	6.3 6.6 6.1
54 salicamans	"	70.2 73.7 66.3	48.0 52.1 44.4	13.2 14.2 12.2	10.5 11.2 9.4	4.7 5.6 3.8	9.1 10.2 7.4	6.3 6.6 5.3
		68.1 72.6 65.0	46.8 50.3 41.1	13.2 14.2 12.7	10.5 11.2 9.6	4.6 5.3 4.1	9.2 10.7 8.1	6.1 6.9 5.6

FEMALES.

5 tristis	Juvenal	68.8 70.6 67.6	47.5 49.3 44.2	12.9 13.7 12.7	10.2 10.7 10.2	4.8 5.1 4.6	8.6 9.1 7.6	5.6 5.8 5.6
5 salicamans	"	65.8 67.1 65.3	45.2 46.2 44.4	12.7 13.2 11.7	10.4 10.9 10.2	4.6 4.8 4.6	8.6 9.1 8.1	6.1 6.6 5.8
22 tristis	1st Winter	68.1 70.1 66.0	47.7 50.3 44.7	12.9 13.5 12.2	10.4 10.9 10.2	4.6 5.3 4.1	8.6 9.1 7.9	5.8 6.1 5.3
5 salicamans	"	65.5 66.8 63.5	45.2 47.7 43.4	12.7 12.9 12.4	10.2 10.7 9.6	4.6 5.1 4.3	9.4 9.6 8.4	6.3 6.6 6.1
9 tristis	1st Nuptial	67.8 68.6 66.5	46.7 48.3 45.2	13.2 13.7 12.7	10.4 10.9 10.2	4.8 5.1 4.3	8.9 9.4 8.4	6.1 6.6 5.8
11 salicamans	"	64.8 67.8 62.2	43.9 46.7 40.6	12.7 13.2 12.2	10.2 10.4 10.2	4.6 4.8 3.6	9.1 9.6 8.6	6.3 6.6 5.8
4 tristis	2d Winter	68.6 69.6 67.8	48.5 49.5 46.5	13.2 13.5 13.2	10.3 10.7 10.2	4.6 5.1 4.1	9.0 9.1 8.9	6.1 6.3 5.8
3 salicamans	"	65.3 66.3 64.5	46.0 47.7 45.2	12.9 12.7 12.4	10.2 10.2 10.2	4.3 5.1 4.3	9.6 9.6 9.4	6.3 6.6 6.1
7 tristis	2d Nuptial	68.3 71.1 66.0	47.7 49.8 45.7	12.7 13.5 12.2	10.4 10.9 10.2	4.6 5.6 3.8	9.1 9.9 8.6	6.1 6.3 6.1
2 salicamans	"	65.3 65.5 65.0	44.4 45.7 43.2	12.4 12.7 12.2	10.3 10.4 10.2	4.1 4.8 3.3	9.2 9.4 9.1	6.0 6.1 5.8
47 tristis	"	66.9 71.1 66.5	47.6 50.3 44.2	13.0 13.7 12.2	10.3 10.9 10.2	4.7 5.6 3.8	8.8 9.9 7.6	6.0 6.6 5.3
26 salicamans	"	65.3 67.8 62.2	44.9 47.7 40.6	12.6 13.2 11.7	10.3 10.9 9.6	4.4 5.1 3.3	9.2 9.6 8.1	6.2 6.6 5.8

The remiges and retrices being worn for a twelvemonth, it is obviously unfair to contrast a series that might be chiefly worn birds with one consisting of fresh-plumaged specimens, so I have prepared the following table which contrasts fresh with worn birds.

TABLE II.

MALES.						Wing.	Tail.
14 tristis,	before 1st midwinter	.	.	}	.	70.4	48.3
5 salicamans	" " "	.	.		.	68.1	47.2
8 tristis	" 2nd "	.	.		.	71.9	50.0
8 salicamans	" " "	.	.		.	70.4	49.0
8 tristis,	after 1st midsummer	.	.	}	.	68.1	46.0
20 salicamans	" " "	.	.		.	67.3	46.0
7 tristis	" 2nd "	.	.		.	70.9	47.2
5 salicamans	" " "	.	.		.	68.1	46.7
FEMALES.							
9 tristis,	before 1st midwinter	.	.	}	.	68.3	47.0
6 salicamans	" " "	.	.		.	66.0	45.5
3 tristis	" 2nd "	.	.		.	68.3	48.3
3 salicamans	" " "	.	.		.	65.3	46.0
3 tristis,	after 1st midsummer	.	.	}	.	67.6	46.7
11 salicamans	" " "	.	.		.	64.8	43.9
2 tristis	" 2nd "	.	.		.	69.8	46.2
2 salicamans	" " "	.	.		.	65.3	44.4

The two tables indicate that adults average a little larger than young birds and suffer more from wear, both losing between periods of moult an appreciable amount of the ends of the wings and tail. It further appears that *salicamans* averages slightly smaller in wings and tail and slightly larger in bill, but the smallness of all of these average differences is apparent if we analyze the figures. I have carried them to tenths of a millimeter in order to be able to show the differences and there is such an overlapping of dimensions in individuals that the ruler gives slight information as to the age, season or race to which a specimen may belong. The average difference in length of wings and tail between *tristis* and *salicamans* is about *two* millimeters, a like difference existing between first and second year birds of either race, and a similar amount of wing and tail length being lost through wear in each race. It is obvious that we are dealing with extremely small vari-

ations whatever way we look at them, and there is still another factor in the matter with which we must reckon. This is the personal factor, and by it I mean that no two students are likely to measure the same series of birds alike. The subjoined table, compiled from published records, shows variations quite as great as any of which I have already spoken, and illustrates individual variation in the measurer rather than in the measured.

TABLE III.

	Wing	Tail	Tarsus	Toe	Culmen	Depth
<i>tristis</i> , males.						
Grinnell, 15 specimens . . .	72.9	52.1	—	—	9.1	6.3
Mearns, 26 " . . .	72.4	50.8	13.7	10.9	10.2	—
Ridgway, 18 " . . .	72.6	47.0	13.7	10.7	10.2	7.4
Dwight, 66 " . . .	70.2	48.0	13.2	10.5	9.1	6.3
<i>tristis</i> , females.						
Grinnell,	—	—	—	—	—	—
Mearns, 7 specimens . . .	70.4	49.5	14.0	10.2	10.2	—
Ridgway, 13 " . . .	68.6	43.4	14.0	10.7	9.9	7.4
Dwight, 47 " . . .	66.9	47.6	13.0	10.3	8.8	6.0
<i>pallidus</i> , males.						
Mearns, 10 specimens . . .	78.0	56.0	13.8	12.0	10.9	—
Ridgway, 17 " . . .	74.9	50.3	14.2	10.7	10.4	7.2
Dwight, 7 " . . .	74.9	54.1	13.5	10.4	9.4	6.3
<i>pallidus</i> , females.						
Mearns, 11 specimens . . .	75.0	54.0	14.0	10.0	10.7	—
Ridgway, 13 " . . .	72.4	46.7	13.9	10.7	10.4	7.1 ¹
Dwight, 8 " . . .	72.1	51.0	13.5	10.7	9.5	6.1
<i>salicamans</i> , males.						
Grinnell, 15 specimens . . .	70.1	50.0	—	—	9.9	6.9
Ridgway, 9 " . . .	70.1	44.4	13.7	10.7	10.2	7.6
Dwight, 54 " . . .	68.1	46.8	13.2	10.5	9.2	6.1
<i>salicamans</i> , females.						
Grinnell,	—	—	—	—	—	—
Ridgway, 3 specimens . . .	68.3	44.2	13.2	10.7	10.2	7.6
Dwight, 26 " . . .	65.3	44.9	12.6	10.3	9.2	6.2

The most obvious fact to be deduced from the foregoing table

¹ Five specimens.

is that niceties in dimension mean very little unless the measurements are taken by one person. It is equally true that small variations in color cannot be described so as to be understood by anyone but the describer. So it comes about that the geographical race of to-day, depending on minor variations, cannot be recognized by its published description, but rests upon characters which may only be made out by studious comparison, not of single skins, but of series of them. It may be said that the individual and seasonal variations to which I have called attention are trivial. That may be true, but they are quite as real as recognized geographical differences.

While I am ready to admit that *pallidus* and *salicamans* are perhaps quite as good races as others that pass current, I must confess I fail to see the scientific value of naming variations so equaled and overlapped by individual and seasonal differences that only a small percentage of specimens in hand can be identified without first knowing the locality from which they come. Identification of the specimen is, of course, only a secondary matter in proving variation by averages, but, it seems to me, unless variations wide enough to be recognized by other students are established, the naming of a race becomes a mere matter of personal opinion or personal vanity.

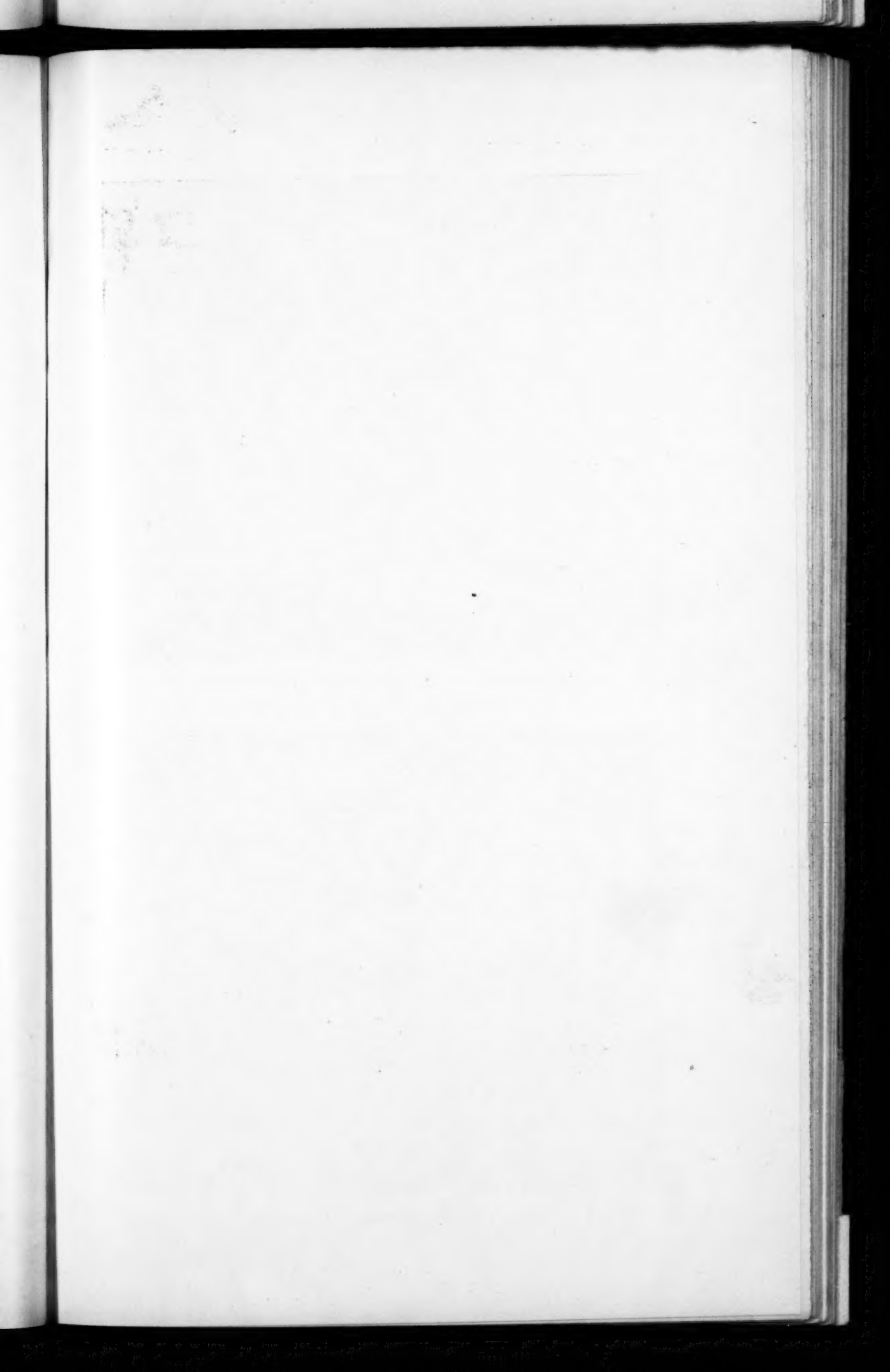




FIG. 1. NEST AND EGGS OF LESSER SCAUP DUCK.



FIG. 2. NEST OF AMERICAN GOLDEN-EYE.

NESTING HABITS OF THE ANATIDÆ IN NORTH DAKOTA.

BY A. C. BENT.

*Plates V and VI.**(Concluded from p. 12.)****Aythya affinis* (Eyt.). LESSER SCAUP DUCK.**

Although not universally abundant the Lesser Scaup Duck can undoubtedly be found during the breeding season in the immediate vicinity of all the larger lakes, and in certain localities is so very abundant as to form what might be regarded as breeding colonies. The centre of its abundance seems to be the Devils Lake region, but we also met with it occasionally elsewhere in Nelson County and on Fullers Lake in Steele County. Its larger relative, the American Scaup Duck, probably breeds sparingly in North Dakota, but I have no evidence to prove it and am inclined to think that if it occurs there at all it is extremely rare. The difficulty in distinguishing the two species in the field might, however, lead one to overlook the rarer species in many cases. These two Scaups can of course be easily separated from all other ducks in the field by the conspicuous white speculum which shows very plainly in flight, and by the short stout build of the bird. The eggs can also be easily identified by their darker and richer color, which I should describe as a rich olive buff; the lightest types approach somewhat the darkest types of the Mallard's eggs, and the darkest types are rich dark buff or deep coffee-colored. The measurements of 26 eggs before me show the following figures: length, 2.36 to 2.10; breadth, 1.64 to 1.53, and average 2.26 by 1.59.

The nests we found were all placed on dry ground but never more than fifty yards from the water. They were generally rather poorly concealed in the prairie grass but in some cases, where the grass grew thick and high, they were fairly well hidden. The nest consisted of a hollow scooped in the ground, profusely lined with very dark colored, almost black down, mingled with a little

dry grass and occasionally a white feather from the breast of the bird. (Pl. V, Fig. 1.)

The principal breeding grounds of this species are the two small islands described under my notes on the Gadwall and Baldpate, where we found all three species nesting abundantly. The Scaups are late breeders, the majority of their eggs being laid during the second week in June or later. On our visit to these islands on May 31, we found only one set of 9 fresh eggs, while on June 15 we found no less than 12 nests; on the larger island, which we explored quite thoroughly, we found three nests of 11 eggs, two nests of 10 eggs, two nests of 9 eggs, and one nest of 5 eggs; on the smaller island, where we made only a hurried search during a driving rain storm, we found only four nests, one of which contained the unusually large number of 15 eggs.

All of these eggs that we collected, three or four sets, proved to be fresh or nearly so. The nests were almost invariably concealed in the taller prairie grass, but one nest was located under a small rose bush and one was placed against the side of a small rock surrounded by tall grass. The Scaup Ducks are close sitters, as we always flushed the bird within ten feet of us or less, and when once flushed they seem to show no further interest in our proceedings. They lay occasionally in other ducks' nests; we found one of their eggs in a Gadwall's nest and one in a White-winged Scoter's nest; but we found no evidence that other ducks ever lay in the Scaup's nests.

The males apparently desert the females after incubation is begun and flock by themselves or with other ducks in the sloughs or small ponds.

Aythya collaris (Donov.). RING-NECKED DUCK.

This being one of the rarer ducks in North Dakota during the breeding season, I have very little of value to add to its life history from personal experience. It breeds quite commonly throughout the State of Minnesota, where it is one of the commonest ducks, and in North Dakota is probably more often found breeding in the valley of the Red River of the North, in the

eastern portion of the State, and in the Turtle Mountain region, than elsewhere; it is certainly rare in the prairie region and the Devils Lake region visited by us. My field experience with the Ring-necked Duck was very limited and was based on very unsatisfactory evidence, but I will give it for what it is worth.

On June 12, while exploring some extensive wet meadows about the sources of a branch of the Goose River in Steele County, I flushed a strange duck from her nest; she flew away at first for a hundred yards or so and then returned circling past me two or three times within gunshot, so that I had a fairly good look at her; I judged from her appearance and gait that she was a Scaup, but could not see that she possessed the conspicuous white speculum so characteristic of both the American and the Lesser Scaup. Not being satisfied with the identification I made two subsequent visits to the nest, intending to shoot the bird, but she was too quick for me the first time, and was not there the second time. The following day we all visited the nest and attempted to creep up cautiously and shoot the bird, but she rose before we were near enough to stop her.

The eggs were unmistakably Scaup's and, as we could not identify the bird as either of the other species, we concluded that they must belong to the Ring-necked Duck. The nest was well concealed in thick grass in a rather open place in the meadow about ten yards from the river; it was made of bits of dry grass and thickly lined with very dark gray down. The ten eggs which it contained were nearly fresh, and are not separable in size, shape or color from those of the Lesser Scaup.

Mr. Job found a nest of the Ring-necked Duck in the Turtle Mountains, where he started a female from her nest on June 14, 1898. I quote from his notes in 'The Auk' for April, 1899, as follows: "It was in a reedy, boggy bayou, or arm of a lake, which was full of Bitterns, Black Terns, and Bronzed, Red-winged and Yellow-headed Blackbirds. I was on my way out to photograph a Bittern's nest already found, and was struggling along more than up to my knees in mud and water, when a smallish Duck flushed almost at my feet from some thick dead rushes, disclosing twelve buffy eggs, nearly fresh. The clear view within a yard of the pearl gray speculum and the total absence of white on the

wing told the story. She alighted nearby in open water, and gave me and my companion such fine opportunity to study her with the glass and note every detail of her plumage, both as she sat and as she flew back and forth before us, that it was not necessary to sacrifice her for identification. Nothing was seen of the male."

Dr. Bishop also flushed two or three ducks from their nests, in Nelson County in 1901, which he supposed to be Ring-necked Ducks, but he did not positively identify the bird in either case.

***Clangula clangula americana* (Faxon). AMERICAN GOLDEN-EYE.**

In the heavily timbered regions about the shores of the larger lakes the Golden-eyes may be found breeding quite commonly, even abundantly in certain localities where the conditions are favorable. Along the shores of these lakes the heavy timber grows in narrow belts, except on the points or promontories, which are often entirely covered with trees, forming a forest of considerable extent. The largest trees are elms which sometimes tower above the rest of the woods to a height of 50 or 60 feet. The swamp oaks grow to a considerable size and approach the elms very closely in height. Cottonwoods and box elders form a large part of the timber but do not equal the first two species in size. The woods thus formed are usually rather open and the large trees somewhat scattered, giving an opportunity for smaller trees and underbrush to grow beneath them. The timbered areas of the State being restricted to these narrow strips, which form such a small part of the total area, has led to overcrowding of the woodland species of birds until the woods are fairly alive with them. Bronzed Grackles fairly swarm here in almost countless numbers, and the smaller trees, as well as many of the larger ones are filled with their nests. The soft cooing of Mourning Doves is heard on all sides. The clamorous cries of the Arkansas Kingbirds are constantly ringing in one's ears. The woods are full of Western House Wrens flitting nervously about and pouring out their joyous, bubbling notes. Purple Martins are sailing about overhead, or

building their nests in the hollows in the treetops. Baltimore Orioles, Rose-breasted Grosbeaks, Clay-colored Sparrows, Red-eyed and Warbling Vireos and Yellow Warblers help to swell the chorus and keep the air constantly full of song. I have never seen such an abundance of bird life, not even in the height of the migrations, as is to be found in these narrow belts of timber. Besides all these small birds the Golden-eyes have for their companions numerous pairs of Swainson's Hawks and occasional pairs of Ferruginous Rough-legs and Krider's Hawks, nesting in the tops of the taller trees.

The Golden-eyes choose for their nesting sites the numerous natural cavities which occur in many of the larger trees. They seem to show no preference as to the kind of tree and not much preference as to the size of the cavity, any cavity which is large enough to conceal them being satisfactory.

The occupied cavity can usually be easily recognized by the presence of one or two pieces of white down clinging to its edges; sometimes considerable of the down is also scattered about on the nearest branches. The first nest that we found, on May 30, was in an exceedingly small cavity in a dead branch of a small elm, about 10 feet from the ground. We heard a great scrambling and scratching going on inside as the duck climbed up to the small opening, through which she wriggled out with some difficulty and flew away. I measured the opening carefully and found it only 3 inches wide by 4½ inches high; the cavity was about 3 feet deep and measured 6 inches by 7 inches at the bottom. The 8 fresh eggs which it contained were lying on the bare chips at the bottom of the cavity, surrounded by a little white down.

On June 1 we explored a large tract of heavy timber on a promontory extending out into the lake for about half a mile, where we located five nests of the American Golden-eye.

The first nest was about 20 feet up in the cavity in the trunk of a large swamp oak and contained four eggs, apparently fresh. The second was in the trunk of a large elm and held only one egg, evidently a last year's egg. The third, which held five eggs, was in an open cavity in an elm stub about 12 feet from the ground. None of these eggs were taken and doubtless the sets were incomplete.

While climbing to a Krider's Hawk's nest I noticed an elm stub

near by with a large open cavity in the top, which on closer investigation was found to contain a Golden-eye's nest with 10 eggs buried in a mass of white down. The stub was about 10 feet high and the cavity about two feet deep; the bird was not on the nest but the eggs proved to have been incubated about one week.

This nest is shown in the accompanying photograph (Plate V, fig. 2), which also shows the Krider's Hawk's nest in the elm in the background. A pair of Western House Wrens also had a nest in the dead branch above the cavity.

The fifth and last nest was found while walking along the shore, by seeing the Golden-eye fly out over our heads from a small swamp oak on the edge of the woods. I could almost reach the large open cavity from the ground; the opening was well decorated with the tell-tale down, and at the bottom of the cavity, two feet deep, was a set of 14 eggs, in which incubation had begun, and one addled last year's egg, completely buried in a profusion of some white down, so well matted together that it could be lifted from the eggs without falling apart, like a soft warm blanket.

The eggs of the American Golden-eye are entirely different in color from any other ducks' eggs to be found in this region, which varies from a clear pale malachite green in the lighter specimens to a more olivaceous or pale chromium green in the darker specimens.

The measurements of 17 eggs in my collection are as follows: length, 2.58 to 2.37; breadth, 1.77 to 1.66; and average 2.46 by 1.71.

Oidemia deglandi Bonap. WHITE-WINGED SCOTER.

Although generally considered to be very rare during the breeding season in North Dakota, we found the White-winged Scoters nesting in fair numbers in certain restricted localities in the Devils Lake region, which probably forms the extreme southern limit of its breeding range. We saw isolated pairs occasionally flying or swimming about in the large lakes, where it breeds in small colonies on the islands with the Gadwalls, Baldpates and Lesser Scaups, or on the shores of the lakes not far from the water. The nests are

admirably concealed from view in thick clumps of small bushes, almost invariably wild rose bushes, which at this time are in full bloom. It is no easy matter hunting for the nests among these stout, thorny bushes, and as the eggs are generally buried under the down, and a mass of rubbish scraped over them, we undoubtedly overlooked a number of them.

The Scoters are very late breeders, the latest of all the ducks, very few of their eggs being laid before June 15, and the majority of them not before the last week in June. We visited two of the islands where they breed on May 31, but did not find a single egg. On June 15 we again explored the same islands quite carefully, finding only one incomplete set of 5 eggs, cold and fresh. This nest was in the centre of a small patch of rose bushes, where a hollow had been scraped in the ground and the eggs buried under a lot of dry leaves, sticks, soil and rubbish, so as to be completely concealed from view; no attempt had been made to line the nest with down which is generally added after the set is complete. The scattered clumps of rose bushes on these islands, particularly on the smaller islands where they grow tall and thick among a mass of large boulders, form excellent nesting sites for the Scoters and doubtless concealed several nests. One nest we certainly overlooked, which on June 22 was found to contain 12 eggs.

Mr. Job visited these islands on June 27, 1898, and found eight nests of the White-winged Scoter containing "14, 13, 10, 10, 7, 6, 1 and 0 eggs respectively" (see Auk, April, 1899, p. 163), which proves conclusively that these birds are late breeders, as all of these eggs were fresh.

The eggs of the White-winged Scoter are much larger than those of the other ducks in this region, and are entirely different in color, which is a pale salmon buff or flesh color.

The measurements of my five eggs are as follows: length, 2.71 to 2.58; breadth, 1.94 to 1.89; average, 2.65 by 1.90.

The eggs of the Scoters are occasionally found in other ducks' nests; we found one in a Baldpate's nest, two in a Lesser Scaup's nest, and one in another Baldpate's nest.

Erismatura jamaicensis (Gmel.). RUDDY DUCK.

We must return again to the innermost recesses of the deep water sloughs, the home of the Canvas-back and the Yellow-headed Black-bird, to study the habits of this handsome little duck, where we are almost sure to find them in every suitable slough. The male, in his full nuptial plumage, is a striking and showy bird as he swims in and out among the reeds or floats about in the open water at a safe distance with the male Canvas-backs and Redheads. He is easily distinguished by his short stout body, his tail pointed upwards or even forwards, his white cheeks and the rich deep red on his back. The female is very shy, the shiest of all the ducks, is seldom seen, and skulks away from her nest when she hears anyone coming; we never were able to flush one from the nest and never even saw one near her nest; nor did we ever see any evidence of parental devotion or anxiety.

In the large deep water sloughs of Steele County there are extensive tracts of tall reeds, often higher than our heads, growing so thickly and closely that nothing can be seen through them at a little distance. In these excellent hiding places the Ruddy Duck conceals its nest, and so well is this done that even after the nest has been once found it is extremely difficult to locate it again. The nests are well made of reeds, closely interwoven, built up out of the water, held in place by the growing reeds, well concealed from view and generally with the live reeds arched over them; they were, as a rule, very sparingly lined with a little dull whitish down, but, as all the eggs we examined were fresh, possibly more down would have been added later. We found in all five nests of the Ruddy Duck in these two sloughs in Steele County; a description of two of them will give a fair idea of them all.

A nest found on June 10 was located among some rather open tall reeds in water knee deep, and was made of dry reeds and a little down; the rim of the nest was about 7 inches above the water and it measured about 7 inches across, the cavity being about 4 inches deep. The 10 eggs which it contained were nearly fresh. This nest is shown in the photograph (Pl. VI, Fig. 1).

Another nest, found on June 11 and collected two days later,



FIG. 1. NEST AND EGGS OF RUDDY DUCK.



FIG. 2. NEST AND EGGS OF CANADIAN GOOSE.



was admirably concealed in the middle of a large area of tall thick reeds where the water was about a foot deep. It was beautifully made of dead and green reeds, artistically interwoven and firmly attached to the growing reeds about it. The dimensions were practically the same as the foregoing nest. It contained 6 eggs, which proved to be almost fresh. The photograph [not here reproduced] gives but a faint idea of the beauty of this nest, and the artistic manner in which the green reeds were arched over above it, forming an effective and a picturesque screen for the pure white eggs.

All our records tend to prove that the Ruddy Duck is one of the later breeders, as all the sets we found during the second week in June were either incomplete or fresh.

That the Ruddy Duck occasionally lays in other duck's nests was proven by our finding one of their eggs in a nest of the Canvas-back. The eggs of the Ruddy Duck are always unmistakable; they are extremely large for the size of the bird, more rounded than the other ducks' eggs, pure dull white in color, and have a rough granular shell peculiar to this species. They vary somewhat in shape from short ovate to elongate ovate.

The 15 eggs before me measure as follows: length, 2.67 to 2.38; breadth, 1.87 to 1.70; average, 2.49 by 1.80.

***Branta canadensis* (Linn.). CANADA GOOSE.**

There are still quite a number of Canada Geese breeding within the limits of North Dakota, but they are apparently not as abundant as formerly and will undoubtedly be driven further west and north as the country becomes more thickly settled. We found several of their nests, but for some unaccountable reason we did not see a single Goose. It is not likely that we could have overlooked such a conspicuous and well marked bird, but, as the nests we found were all deserted, it is probable that the birds had all moved off with their broods to other sections where we could not find them.

They nest on the islands in the larger lakes and in the sloughs, building two entirely different types of nest in the two localities.

They are very early breeders, laying their eggs early in May, and hatching out their young generally before the first of June. One of their nests, found on a small island inhabited by a colony of Double-crested Cormorants, Ring-billed Gulls and a few ducks, was merely a depression in the bare ground among scattered large stones, lined with a few sticks and straws and a quantity of down. This nest, on May 31, had apparently been deserted for some time.

In a large slough in Nelson County, on June 2, we found a deserted nest containing three eggs, the broken shells of those that had hatched being scattered about the nest. It was in a shallow portion of the slough where the dead flags had been beaten down flat for a space fifty feet square, and not far from a Redhead's nest. The nest was a bulky mass of dead flags, three feet in diameter and but slightly hollowed in the center.

A similarly located nest was found in a slough in Steele County on June 10 (shown in Pl. VI, Fig. 2). This contained only one egg which had failed to hatch and was, like the other nest, within a few yards of a Redhead's nest. The proximity of these two Redheads' nests to the nests of the Geese may have been merely a coincidence, but it suggests the possibility that it was done to gain the protection of the larger bird. This suggestion was somewhat strengthened when I saw a skunk foraging in the vicinity; undoubtedly these animals find an abundant food supply in the numerous nests of ducks and coots in these sloughs.

The eggs of the Canada Goose are a dull dirty white, and the 3 eggs in my collection give the following measurements: 3.60 by 2.40, 3.61 by 2.41, and 3.50 by 2.37.



FIG. 1. GULL CLIFF, ANTICOSTI ISLAND.

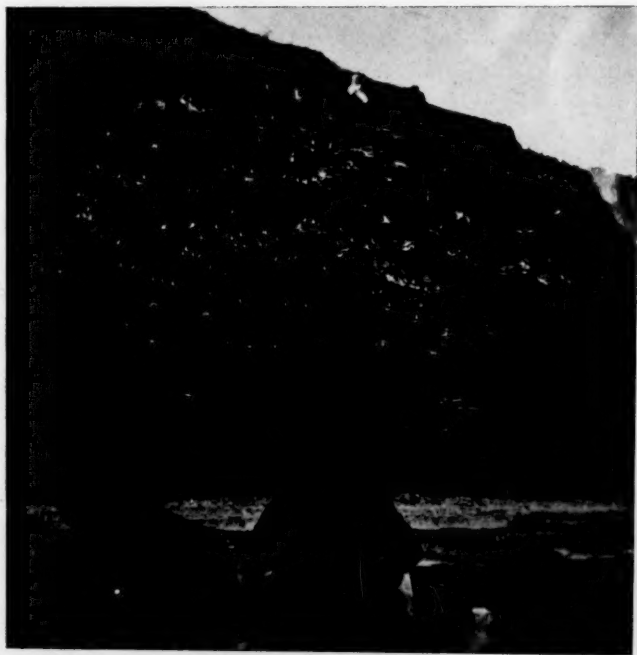


FIG. 2. GULL CLIFF, ANTICOSTI ISLAND.



A SYNOPSIS OF THE GENUS COMMONLY CALLED
ANORTHURA.

BY HARRY C. OBERHOLSER.

THE group of birds that among others includes the common European Wren and the American Winter Wren is apparently well worthy of generic segregation. To this genus, when recognized in nomenclature, the name *Anorthura* has been applied, although quite erroneously, as has been shown by Professor Newton,¹ and still more recently by Mr. Howe.² The term *Anorthura* is a strict equivalent of *Troglodytes*, as the following quotation conclusively proves:

"I have thought it expedient to substitute a new name [*Anorthura*] for this genus, instead of the received one, *Troglodytes*, which is taken from a false notion that the Wrens live in caverns, as the ancient people named *Troglodyta*, are recorded to have done."³

That this state of affairs should have remained so long unnoticed is due probably to the overlooking of the original description which occurs on page 6, instead of page 570 as apparently always quoted. Even Mr. Howe gives only the latter.

In seeking a name for the short-tailed wrens thus bereft of their commonly accepted designation, Mr. Howe arrives at the conclusion that they must be called *Troglodytes*, and the group now known by that name must pass as *Hylemathrous*; his reasons for which may be ascertained by consulting his note.⁴ This, however, does not seem to be the best way out of the difficulty. While Vieillot proposed the generic term *Troglodytes*⁵ evidently for all the wrens then known, he actually included but three species, — *Troglodytes aëdon* Vieillot, *Motacilla fulva* Gmelin (= *Trog-*

¹ Dictionary of Birds, 1896, p. 1051.

² Auk, XIX, 1902, p. 89.

³ Rennie, Montagu's Ornith. Dict. Brit. Birds, ed. 2, 1831, p. 6.

⁴ Auk, XIX, 1902, pp. 89, 90.

⁵ Hist. Nat. Ois. Am. Sept., II, 1807, p. 52.

lodytes furvus auct.¹) and *Troglodytes arundinaceus* Vieillot (= *Thryothorus ludovicianus* auct.), the European wren being mentioned in only the most incidental manner; and since we are not so much concerned with what he intended as with what he actually did, it follows that one of the three species he treats must be considered the type of the genus. Vieillot himself soon afterward removed *Troglodytes arundinaceus* to form the type of *Thryothorus*,² leaving two congeneric forms, the first of which, *aëdon*, has more and better claims to be treated as the type of *Troglodytes*.

Although with this view of the matter the name *Hylemathrous* Maximilian³ is of course untenable, it may not be out of place to mention that it can in no case enter into the equation, for it is a name of character exactly similar to *Anorthura*, and is a pure synonym of *Thryothorus*, not of *Troglodytes*! It is proposed in the following fashion: "Vieillot belegt diese Familie mit der Benennung Binsenspringer (*Tryothorus*) [err. typ.], die aber nicht vollkommen auf die Lebensart der von mir beobachteten Vögel passt, da ich sie nur in dichten Gebüsch und nicht am Wasser gesehen habe. Man könnte sie eher *Hylemathrous* (der im Busche ruft) nennen."⁴

Maximilian furthermore does not mention the name except in this one place, preferring after all to use *Thryothorus* of Vieillot. Aside from the four species which he here formally refers to *Thryothorus* and which, by the way, now belong to as many different genera, he adds in his general discussion of the genus: "Hierhin gehören noch mehrere andere Vögel, z. B. *Troglodytes furvus*, *aëdon* Vieill., *Sylvia caroliniana* Wilson [= *Thryothorus ludovicianus* auct.], welche zum Theil auf der Gränze zwischen *Troglodytes* und *Thryothorus* stehen."⁵

With *aëdon* the type of *Troglodytes*, and *Anorthura* a synonym, the short-tailed wrens of Europe and America are left without a generic name, for *Elachura* Oates, instituted for *Troglodytes punctatus* Blyth (*nec* Brehm), is apparently entitled to separation.

¹ The description and accompanying notes all point to this identification, so that "*fulva*" is evidently a typographical error or *lapsus calami* for "*furva*."

² Analyse, 1816, p. 45.

³ Beiträg. Naturg. Bras., III, 1830, p. 742.

⁴ Maximilian, Beiträg. Naturg. Bras., III, 1830, pp. 741, 742.

⁵ Maximilian, *l. c.*, p. 741.

Olbiorchilus,¹ gen. nov.

Troglodytes CUVIER, 1817, *nec* VIEILLOT, 1807.

Anorthura AUCT., *nec* RENNIE, 1831.

Type, *Motacilla troglodytes* Linnæus.

Range. — Asia, excepting the southeastern corner, and central and western Siberia; Europe; extreme northwestern Africa; and nearly all of North America.

Olbiorchilus fumigatus fumigatus (Temminck).

Troglodytes fumigatus TEMMINCK, Man. d' Ornith. III, 1835, p. 161.

Troglodytes fucatus BREHM, Naumannia, 1855, p. 285.

Type locality. — Japan.

Geographical distribution. — Japan.

Olbiorchilus fumigatus kurilensis (Stejneger).

Troglodytes fumigatus kurilensis STEJNEGER, Proc. U. S. Nat. Mus. XI, 1889, p. 548.

Type locality. — Shiashekotan Island, Kuril Islands.

Geographical distribution. — Kuril Islands, Japan.

Closely allied to true *fumigatus*, but a recognizable race.

Olbiorchilus fumigatus dauricus (Dybowski & Taczanowski).

Troglodytes dauricus DYBOWSKI & TACZANOWSKI, Bull. Soc. Zool. de France, IX, 1884, p. 155.

Type locality. — Dauria, southern Siberia.

Geographical distribution. — Northeastern Asia, from northern China to Mongolia and eastern Siberia.

Appears to be distinguishable from true *fumigatus* by larger size, and less rufescent color on the upper surface. Although its range can not be fully worked out from the scanty material available, this form probably represents *fumigatus* on the mainland of Asia, thus restricting the latter to the islands of Japan.

Olbiorchilus fumigatus nipalensis (Blyth).

Troglodytes nipalensis BLYTH, Journ. As. Soc. Bengal, XIV, pt. 2, 1845, p. 589 (ex Hodgson MS.).

¹ ὄλβιος, felix; ὄρχλος, regulus.

Troglodytes subhemalichanus HODGSON, in Gray's Zool. Misc., 1844, p. 82.

Type locality. — Nepal.

Geographical distribution. — Himalaya Mountains, from southern Cashmere to Sikhim; northeast to southern Shen See, China.

This is apparently but a subspecies of *fumigatus*, though a well-marked one.

***Olbiorchilus fumigatus neglectus* (Brooks).**

Troglodytes neglectus BROOKS, Journ. As. Soc. Bengal, 1872, p. 328.

Type locality. — Cashmere.

Geographical distribution. — Cashmere to Gilgit, Central Asia.

***Olbiorchilus pallescens* (Ridgway).**

Anorthura pallescens RIDGWAY, Proc. U. S. Nat. Mus. VI, 1883, p. 93 (ex Stejneger MS.).

Type locality. — Bering Island, Commander Islands.

Geographical distribution. — Commander Islands, North Pacific Ocean.

***Olbiorchilus meligerus* (Oberholser).**

Anorthura meligera OBERHOLSER, Auk, XVII, 1900, p. 25.

Type locality. — Attu Island, Alaska.

Geographical distribution. — Western Aleutian Islands, Alaska.

***Olbiorchilus alascensis* (Baird).**

Troglodytes alascensis BAIRD, Trans. Chicago Acad. Sci. I, pt. ii, 1869, p. 315, pl. xxx, fig. 3.

Type Locality. — Saint George Island, Pribilof Islands.

Geographical distribution. — Pribilof and eastern Aleutian Islands, Alaska.

***Olbiorchilus hiemalis hiemalis* (Vieillot).**

Troglodytes hiemalis VIEILLOT, Nouv. Dict. d'Hist. Nat. XXXIV, 1819, p. 514.

Troglodytes parvulus var. *americanus* NAUMANN, Naturg. Vög. Deutschl., III, 1823, p. 724 (table).

Type locality. — Nova Scotia.

Geographical distribution. — Eastern North America; breeding southward to the northern part of the United States, and along the Alleghany Mountains to North Carolina.

***Olbiorchilus hiemalis helleri* (Osgood).**

Anorthura hiemalis helleri OSGOOD, Auk, XVIII, 1901, p. 181.

Type locality.—English Bay, near Kadiak, Kadiak Island, Alaska.

Geographical distribution.—Kadiak Island, Alaska.

Apparently inclining slightly toward *alascensis*, though not sufficiently intermediate to indicate subspecific relationship.

***Olbiorchilus hiemalis pacificus* (Baird).**

Troglodytes hyemalis var. *pacificus* BAIRD, Rev. Amer. Birds, I, 1864, p. 145.

Type locality.—Simiahmoo, Washington, U. S. A.

Geographical distribution.—Pacific coast region of North America, from southern Alaska to southern California, and east to the Rocky Mountains; in winter south to western Mexico.

***Olbiorchilus troglodytes troglodytes* (Linnaeus).**

Motacilla troglodytes LINNÆUS, Syst. Nat. I, 1758, p. 188.

Troglodytes europæa VIEILLOT, Nouv. Dict. d'Hist. Nat. XXXIV, 1819, p. 511.

Troglodytes punctatus BREHM, Naturg. Europ. Vögel, I, 1823, p. 318.

Troglodytes parvulus KOCH, Syst. baier. Zool. I, 1816, p. 161.

Troglodytes vulgaris FLEMING, Brit. Anim. 1828, p. 73.

Troglodytes regulus MEYER, Zusätze Taschenb. deutschl. Vög., 1822, p. 96.

Troglodytes domesticus BREHM, Handb. Vög. Deutschl. 1831, p. 454 (nec Wilson).

Troglodytes sylvestris BREHM, Handb. Vög. Deutschl. 1831, p. 455.

Anorthura communis RENNIE, in Montagu's Orn. Dict. 2nd ed. 1831, p. 570.

Troglodytes tenuirostris BREHM, Vogelfang, 1855, p. 238.

Troglodytes naumanni BREHM, Vogelfang, 1855, p. 238.

Troglodytes verus BURMEISTER, Syst. Uebers. Thier. Bras. III, 1856, p. 137 (*nomen nudum*).

Troglodytes linnei MALM, Göteborg. u. Bohusl. Fauna, 1877, p. 169.

Troglodytes hirtensis SEEBOHM, Zoologist, 1884, p. 333.

Type locality.—Europe.

Geographical distribution.—Nearly the whole of Europe; extreme northern Africa, west of Egypt; northern Palestine and Asia Minor to Persia.

Specimens from St. Kilda, which form the basis of Mr. Seebohm's *hirtensis* we have not seen, but they are apparently the same as

birds from the British Isles.¹ There is a surprisingly small amount of geographical variation in this species, considering its extensive range.

***Olbiorchilus troglodytes bergensis* (Stejneger).**

Troglodytes parvulus bergensis, STEJNEGER, Zeitschr. Gesam. Orn. I, 1884, pp. 9, 10.

Type locality.—Bergen, Norway.

Geographical distribution.—Norway and probably Sweden.

This race is closely allied to true *troglodytes*, though apparently separable on the *average* characters of more distinct dark barring on back and rump and duller, less rufescent color of the upper parts. The type is extreme in these respects, and is by no means equalled by any of the several other specimens examined.

***Olbiorchilus troglodytes borealis* (Fischer).**

Troglodytes borealis FISCHER, Journ. f. Orn. 1861, p. 14, pl. i.

Type locality.—Faeroe Islands.

Geographical distribution.—The Faeroe Islands and Iceland.

This form is so closely connected with true *troglodytes*, by individual variation of both color and markings, that notwithstanding its island home, a trinomial better expresses its relationship. There seems to be no difference in size.

***Olbiorchilus troglodytes pallidus* (Hume).**

Troglodytes pallidus HUME, Stray Feathers, 1875, p. 219, note.

Type locality.—Kashgar, Eastern Turkestan.

Geographical distribution.—Western part of eastern Turkestan, with probably the adjoining region of central Asia.

A perfectly good form, though apparently but subspecifically distinct from true *troglodytes*.

***Elachura Oates*.**

Elachura OATES, Faun. Brit. India, I, 1889, p. 339.

Type.—*Troglodytes punctatus* Blyth.

Range.—Cachar and vicinity of Darjeeling, northeastern India.

¹ Cf. Dresser, Ibis, 1886, p. 43.

Elachura formosa (Walden).

Troglodytes punctatus BLYTH, Journ. As. Soc. Bengal, XIV, 1845, pt. 2, p. 589 (*nec* Brehm).

Troglodytes formosus WALDEN, Ibis, 1874, p. 91.

Type locality.—Darjeeling, India.

Geographical distribution.—Neighborhood of Darjeeling, northeastern India.

The name *punctata* is untenable for this bird, being preoccupied by *Troglodytes punctatus* Brehm,¹ a synonym of *Olbiorchilus troglodytes*. Dr. Sharpe long ago called attention to this fact,² but the term *punctata* unfortunately has been adopted by some later writers.

Elachura haplonota Baker.

Elachura haplonota BAKER, Ibis, 1892, p. 62, pl. ii.

Type locality.—Hungrum Peak, North Cachar Hills, India.

Geographical distribution.—North Cachar Hills, northeastern India.

Seemingly a very distinct species.

A SUMMER COLONY AT ANTICOSTI.

BY JOSEPH SCHMITT, M. D.

Plate VII.

ANTICOSTI ISLAND, in the Gulf of St. Lawrence, where I have lived for some years as medical doctor in the service of the proprietor, Mr. Henri Menier, offers for study many very interesting subjects of natural history. In respect to birds, I will now call attention to a summer colony of sea-birds, which, while not having the importance of several famous bird rocks, as those at Percé, nevertheless deserves special mention. Here in a bay is Gull Cliff, facing northeast, which, from May until September is the resort

¹ Naturg. Europ. Vögel, I, 1823, p. 318.

² Cat. Birds Brit. Mus., VI, 1881, p. 279.

of numerous birds which come here to breed. The steamer 'Savoy,' in visiting the different places around the island, is sometimes obliged in stormy weather to seek shelter in this harbor. It was while the 'Savoy' was at anchor that I chanced to have the opportunity of observing the birds of Gull Cliff.

When a mile out in the offing we could perceive with a telescope about these abrupt rocks an incessant stream going and coming, like an immense swarm of bees near a gigantic hive, usually forming two parallel but opposite currents. On approaching we could better determine these objects, and little by little could distinguish the birds. Even some of them, going in pursuit of fish, would pass near the steamer so that we could recognize the species. At last, the depth of the sea being sufficient, the 'Savoy' came to anchor very near the shore. The approach of the boat disquieted the colony, and it was all in confusion, as when the anchor is let go the sound of the chain is echoed from the cliff. Then from every jutting point of the rocks numberless birds fly off, but they soon return again. If we land with the ship's boat there is a new disquiet in the colony, but the birds quickly compose themselves and soon begin again their continuous going and coming as if nothing had happened.

At low water it is possible to land at the foot of this rock, where is light rubble, which is covered again at high water. This cliff, cut perpendicularly and nearly 200 feet high, is composed of layers of rock which offer numerous projections, every one of which contains a nest. The jutting point is often so small that the bird has just room enough to lay its eggs, and it often happens that the young as they increase in size, a few days after birth, in spite of wondrous equilibrium, cannot maintain themselves in the rudimentary nest, and fall down the cliff where they are quickly drowned.

On carefully observing these birds, we find that the greatest number are Kittiwakes (*Rissa tridactyla*) which occupy the rock from the inferior third nearly to the summit.

Among them we find grouped several families of Murres (*Uria troile*) and, especially on the southern portion, some Puffins (*Fratercula arctica*). Also here and there some Bonaparte Gulls (*Larus philadelphia*) and above these and always near the top of the rock several nests of Cormorants (*Phalacrocorax dilophus*).

Near the anchored steamer were many Terns (*Sterna hirundo*), but I could not tell whether or not they live on the cliff.

The length of the cliff inhabited by the birds is about one mile. By counting the birds on a section of the cliff, we estimated the number of birds at not less than 60,000. The photographs (Pl. VII) were taken under very unfavorable circumstances, owing to foggy weather, but may help to give some idea of the abundance of the birds.

AN UNDESCRIBED FORM OF THE BLACK DUCK (*ANAS OBSCURA*).

BY WILLIAM BREWSTER.

It is a matter of common belief among our more intelligent and observing wild-fowl gunners that two kinds of Black Ducks are found in New England, and certain of the characters by which they are thought to be separable have been mentioned, as well as briefly discussed, by writers on ornithology or field sports. To one, a comparatively small, dark race having a dusky or olivaceous bill and brownish legs, all our local or breeding birds are supposed to belong; the other, a larger, lighter-colored form with clear yellow bill and bright red legs, is known to occur only during migration or in winter. I have often been struck by these and certain other differences which will be mentioned later, and for the purpose of testing their value and significance I have brought together, with the kind assistance of several of my friends, a large series of specimens most of which were obtained in New England in autumn, winter or early spring. Among them are a dozen or more collected in late August and early September at Lake Umbagog, which almost certainly represent the form resident in summer throughout New England although I have none from any locality south of the Gulf of St. Lawrence which were taken at the *height* of the breeding season. Some of my specimens were weighed before being skinned and many of them are accompanied by notes

relating to the original coloring of their bills, legs and feet. As the more brilliant tints of these 'soft parts' fade soon after death, and eventually nearly or quite disappear, they are not available in comparisons of dried skins unless recorded by the collector soon after his birds are killed.

A careful study of this material has convinced me that the large, red-legged bird differs sufficiently from true *obscura* to stand as a distinct subspecies, which may be briefly characterized as follows:

***Anas obscura rubripes*, new subspecies. RED-LEGGED
BLACK DUCK.**

Subspecific characters.—Similar to *A. obscura* but larger; the feathers of the pileum conspicuously edged with grayish or fulvous; the dark markings on the fore neck and the sides of the head coarser, blacker and more sharply defined; the entire throat usually streaked or spotted with blackish; the tarsi and toes bright red; the bill yellow.

Type, No. 30252, ♂ ad. Collection of William Brewster, Lake Umbagog (New Hampshire shore), October 8, 1889; W. Brewster.

Habitat.—Occurring during migration or in winter on or near the Atlantic Coast from Newfoundland to Virginia (Cobbs Island); in the interior as far to the south and west as Arkansas. Summer range not definitely known but breeding specimens examined from Northern Labrador, James Bay and the west shore of Hudson Bay.

MEASUREMENTS.

		Wing.	Tarsus.	Middle toe without nail.	Culmen from base (chord).	Culmen from nostril.
<i>Anas obscura</i>	average of 7 males	10.52+	1.65—	2.20—	2.05—	1.58—
<i>A. o. rubripes</i>	" " 21 "	10.99+	1.68—	2.26+	2.13—	1.66—
<i>Anas obscura</i>	average of 15 females	10.14+	1.61—	2.09—	1.93—	1.52+
<i>A. o. rubripes</i>	" " 19 "	10.47+	1.66+	2.15+	2.03+	1.60—

I have had repeated opportunities for comparing the two forms when living or immediately after death. They are sufficiently unlike in respect to size and proportions, as well as in coloring, to be distinguished, under favorable conditions, at more than gunshot distance when flying, and when freshly killed and placed side by side they may be separated at a glance. The larger bird usually has the entire bill (excepting the nail) yellow, varying from

chrome to canary or sulphur yellow, the legs and toes bright red, varying from light scarlet to deep orange, the dark feathers of the pileum and nape conspicuously margined with gray or fulvous, and the throat (as well as sometimes the chin, also) profusely spotted or streaked with blackish. All the dark markings on the cheeks, throat and neck are broader, blacker and more sharply defined than in true *obscura* and they often take the form of coarse, rounded spots which are seldom if ever present on the head or neck of the smaller bird.

In typical examples of *obscura* the bill is greenish black; dusky olive, or olive green, the legs are olivaceous brown with, at most, only a tinge of reddish, the pileum and nape nearly or quite uniformly dark, the throat and chin immaculate, the markings on the neck and sides of the head fine, linear, and dusky rather than blackish. In respect to these characteristics *obscura* does not seem to vary with age or season for my series includes several young not sufficiently large and fully feathered to have been able to fly which are colored and marked precisely like specimens killed in late autumn, while breeding birds are distinguishable from the latter only by the more worn and faded appearance of their plumage. The males of both forms, however, are almost invariably larger than the females as well as more richly colored and heavily marked, especially on the head and neck; a fact which should be borne carefully in mind when specimens of the two are compared.

Both races are evidently subject to a good deal of individual or geographical variation which tends to connect them by a series of intergrading specimens. Thus I have small birds with grayish crowns or streaked throats and even one or two which, in life, apparently had yellow bills and red legs, while several of the large ones have plain black crowns or immaculate throats. I have yet to see a specimen of *obscura*, however, which possesses the coarse, rounded, deep black spots that are usually present in greater or less numbers on the neck, as well as often on the throat, of *rubripes*.

The existence of a small percentage of non-typical examples, like those just mentioned, does not necessarily affect the diagnostic value of the characters to which I have called attention.

Indeed it would be possible to contend that these aberrant or intermediate specimens are really hybrids, for in the series before me they do not exceed in number the birds (no less than nine) *which show unmistakable traces of an infusion of Mallard blood.* Since two species so obviously distinct as are the Mallard and Black Duck are connected by intergrades *known* to be hybrids, why should we not assume that the scarcely more numerous intergrades between the red-legged and brown-legged Black Ducks are also hybrids? Not that I am disposed to seriously press this argument for, however plausible it may seem, my present impression is that the forms of the Black Duck here considered are only sub-specifically distinct.

There can be no reasonable doubt that the smaller of the two is the original *Anas obscura*. This name has remained unchanged in form and uncoupled with any synonym ever since it was instituted, more than one hundred years ago, by Gmelin (Syst. Nat. I, part ii, 1788, 541), who based it on the "Dusky Duck" of Pennant. This is described (Arct. Zool., II, 564) as coming "from the province of New York" and having "a long and narrow dusky bill, tinged with blue: chin white: neck pale brown, streaked downwards with dusky lines." Pennant adds that the legs in one of his birds were "dusky, in another yellow"; but as the specimens which he examined were evidently dried skins (in the Blasius Museum) this statement, as well as that relating to the color of the bill, loses much of its apparent importance.

At Lake Umbagog, where the Black Duck breeds rather plentifully, I have not cared to incur the odium of breaking the game laws and the reproaches of my own conscience by killing birds which were sitting on their eggs or in charge of broods of tender young, but I have shot a few specimens in late August and very many during the month of September. Among these I have found only one example of *rubripes*, a nearly typical female taken on September 28, 1889. With this single exception I have never met with the red-legged form at this locality before October 8. Soon after that date it becomes common, remaining until the waters of the lake are closed by ice.

In Massachusetts, also, the locally bred birds or early migrants from the north, which we kill during September and the first half

of October, are, as far as I have observed, invariably *obscura*. Most of the representatives of this race evidently pass further southward to spend the winter, but I have three typical specimens which were shot on our seacoast (at Ipswich and Chatham) during the latter half of February, 1901.

Until very recently I had supposed that the Black Ducks which breed about the Gulf of St. Lawrence and to the northward along the eastern coast of Labrador would prove to belong to the red-legged form, but Mr. C. F. Batchelder has shown me seven specimens (all but one adult) which were collected for him in Newfoundland in June and July and which, although slightly larger than our New-England-breeding birds, are precisely similar to the latter in color and markings. A female in Mr. O. Bang's collection taken in the Straits of Belle Isle on April 25, 1900, must also be referred to *obscura*. Another, belonging to Mr. J. D. Sornborger, which, with her brood of ducklings, was captured on July 8, 1896, at Okak, on the northeastern coast of Labrador, is intermediate in certain respects between *obscura* and *rubripes*, but on the whole perhaps nearer the former.

To the red-legged race I can unhesitatingly refer only four of the breeding Black Ducks which I have examined. One of these (a female) was taken by Mr. L. M. Turner on July 1, 1884, at Ungava, Northern Labrador; another (unsexed and without date) by Mr. John McKensie at Moose Factory on James Bay; a third (represented by only the head and wing and bearing no sex mark but evidently a female, for it was "with young") by Mr. C. Drexler, on June 19, 1860, at Cape Hope, Severn River; the fourth (a male) by Mr. E. A. Preble, on July 28, 1900, at Fort Churchill;—the two localities last named being on the western shores of Hudson Bay. Mr. Preble's specimen is in the collection of the Biological Survey while the others belong to the National Museum. All four of these birds are in poor condition for comparison. Two of them were moulting, and the plumage of the other two is worn and faded, while that of the Moose Factory skin is also strongly tinged with rusty chestnut—a mere superficial stain, apparently. Nevertheless they show satisfactorily most of the essential characters of *rubripes*. In respect to size and the character and distribution of the black markings on the

head and neck they are quite typical of that form. The original coloring of the soft parts is not noted on any of the labels, but that of the legs in the three specimens which still possess these appendages was apparently bright red. As would be expected, the light edging on the feathers of the pileum is much narrower and less conspicuous than in birds in fresh winter plumage.

From this evidence it seems reasonably safe to assume that the breeding range of true *obscura* extends, coastwise, to the north and east at least as far as Newfoundland and Southern Labrador and that throughout this maritime belt, as well as in New England and to the southward, *rubripes* occurs only during migration or in winter. The summer distribution of the latter remains to be definitely ascertained, but besides occupying the shores of Hudson Bay and those of northern Labrador it probably frequents more or less of the vast interior region lying between the points just mentioned and the St. Lawrence River. The frequency of its occurrence in late autumn at Lake Umbagog indicates that a good many of the birds which breed about Hudson Bay or to the southward take the shortest possible route to their winter quarters on the coast of New England. Others, no doubt, move directly southward for there is a typical red-legged bird in the Museum of Comparative Zoölogy which was taken in Mississippi County, Arkansas, on Nov. 5, 1887.¹ Those which pass their summers in northern Labrador probably follow the Atlantic coast line during migration for Mr. Batchelder has a specimen of *rubripes* which was shot at Custlett, Newfoundland, on November 6, 1890.

It is interesting to note that in respect to one of the more essential of its distinguishing characters — viz., the immaculate buffy throat — the more southern of the forms just considered shows a slight but significant approach to the Black Duck of Florida (*Anas fulvigula*) which has not only the entire throat, but also the jugulum and the greater part of the cheeks, entirely free from markings.

¹ It is probable that a large proportion of the birds which occur in autumn or winter in the Mississippi Valley and about the Great Lakes belong to the form *rubripes* but the only Black Duck of any kind that I have seen from this region is the one above mentioned.

A PLAN FOR RECORDING IN A CONDENSED FORM THE LIFE-HISTORY NOTES OF BIRDS.

BY A. H. FELGER.

IN THE study of ornithology there is perhaps no field so neglected as that of careful and systematic observing and note-taking on the life-histories of birds. With the average collector the tendency is to make collections of skins, nests, and eggs with records of dates, localities, and numbers found, without pausing to record notes of greater importance. While the writer recognizes the necessity of making collections of skins, nests, and eggs, he realizes at the same time that such collections, unless supplemented by complete and carefully prepared notes, are emphatically inadequate in the determination of life-histories — the ultimate purpose of ornithology.

There are numerous factors lending their influence in favor of collecting, and against the work here referred to, among the most prominent being: (1) the inherent desire to collect per se; (2) the greater interestingness of collecting; (3) the tediousness of waiting and watching in note-taking; (4) the uncertainty and slowness of results in the latter; (5) the non-attractive clerical labor thereafter involved. To minimize this clerical labor is the purpose of this article.

In entering upon a discussion of this subject it is necessary in the outset to determine what character of notes should be recorded. By common consent, we take it, the following will be included: general locality, temperature, condition of the weather, direction and force of the wind, amount of rainfall or snowfall, advance of vegetation, new insects abroad, environments, number of birds seen or heard, number of indications of mating, number of indications of nest-building, number of nests found containing eggs, number of nests found containing nestlings, number of young seen on the wing, condition of plumage, stage of moult, food and food habits. To these the following should be added: time out, exact locality, prevailing wind of locality, species searched for but not found, number of birds seen in flocks, number of birds seen in migration flight. The direction and force of the prevailing wind

are unquestionably more important factors in the distribution of birds over certain areas than the direction and force of the wind during any one day.

It has been suggested that one should record the specialty that he is engaged in during the day under consideration. Although we recognize the fact that one will not make as many observations on bird habits while collecting birds, nests, or eggs, and that allowance might be made if one did not observe certain expected birds while engaged in such other pursuits, yet, a personal element is hereby introduced that should be avoided. This personal element being variable in different persons, and variable in the same person, depending on his physical and mental condition on the day specified, renders such record more or less invaluable. After all, it is the positive and not the negative records that are most important. If an observation be made and recorded, in respect to our fellow scientist we assume the record to be accurate. Should the same person, whoever he be, fail to make an expected observation, we could not rightly conclude that such observation was impossible.

It has also been suggested that a record be kept of the method of travel on expeditions of observation. Aside from having the conviction that such records would lack value on account of the introduction of the personal element just referred to, we are reminded that any unimportant detail included in our plan will tend to make it cumbersome and thus defeat its object.

In order that the reader may the more readily comprehend the subject-matter that we recommend to be recorded, it is outlined below with a convenient abbreviation placed after each subdivision. Care has been taken in the selection of subdivision names that none of those closely associated would begin with the same letter, a condition that would render their natural abbreviations confusing.

OUTLINE OF HEADLINE NOTES.

1. General Locality (*e. g.*, Platte River, Denver, Colo.).
2. Time Out (*e. g.*, 9:30-5:15).
3. Average Temperature during the Day (*e. g.*, 50°).
4. Weather { Sunny (S.).
Fair (F.).
Cloudy (C.).

5. Prevailing Wind of Locality { Direction (*e. g.*, N. E.).
Force { Low (L.).
Moderate (M.).
High (H.)
6. Wind of the Day (outlined as above).
- Rainfall { Light (R. L., or S. L.).
7. or { Moderate (R. M., or S. M.).
Snowfall { Heavy (R. H., or S. H.).
8. Advance of Vegetation { New Leaf-buds Out (B.....).
New Leaves Out (L.....).
New Flowers Out (F.....).
New Seeds Ripe (S.....).
9. New Insects Abroad.
10. Remarks.

OUTLINE OF SECTIONAL NOTES.

1. Exact Locality by Range, Township, Section, and Quarter (*e. g.*, 67 W., 1 N., 6, 3).
2. Environments.
3. Number of Birds Seen or Heard { Exact { ♂ (*e. g.*, 6 ♂).
♀ (*e. g.*, 5 ♀).
Approximate { ♂ (*e. g.*, .50 ♂).
♀ (*e. g.*, .25 ♀).
4. Species Searched For but Not Found (*e. g.*, 0).
5. Number of Indications of Mating (*e. g.*, 12 M.).
6. Nests and Young { Number of Indications of Nest-building (*e. g.*, 4 B.).
Number of Nests with Eggs (*e. g.*, 3 E.).
Number of Nests with Nestlings (*e. g.*, 5 N.).
Number of Young on the Wing (*e. g.*, 15 W.).
7. Indications of Migration { Number in Flocks { Exact { ♂ (*e. g.*, 46 ♂ F.).
♀ (*e. g.*, 30 ♀ F.).
Approximate { ♂ (*e. g.*, .50 ♂ F.).
♀ (*e. g.*, .50 ♀ F.).
Number in Migration Flight { Exact { ♂ (*e. g.*, 46 ♂ M.).
♀ (*e. g.*, 30 ♀ M.).
Approximate { ♂ (*e. g.*, .50 ♂ M.).
♀ (*e. g.*, .50 ♀ M.). or (*e. g.*, .100 F. M.).
8. Plumage.
9. Moults.
10. Food { Of Young { In Nest (*e. g.*, F. Y. N.).
On Wing (*e. g.*, F. Y. W.).
Of Adults (*e. g.*, F. A.).
11. Reference to Photograph taken of this Species on this Day.
12. Reference to Drawing made of this Species on this Day.
13. Reference to Additional Notes taken on this Species on this Day.
14. Reference to Résumé of Notes taken on this Species.

The heading 'Number of Indications of Mating' might receive numerous subdivisions like the following: singing, calling, cooing, drumming, strutting, scraping, etc.; but it is deemed inadvisable to burden the sectional notes with these. All notes in regard to the method of wooing should be recorded on the back of the form, or in a book containing more extended field notes, to which reference may be made in the manner hereinafter suggested.

The form herein given and recommended for these records is somewhat similar to that proposed by Chapman, though it is much more complete. For convenience in discussion we will divide the form into three parts: headline spaces, marginal divisions, sections. The headline spaces are respectively 5 mm., 7 mm., and 14 mm. wide. The marginal divisions are 25 mm. long by 24 mm. wide. The sections are 24 mm. long by 20 mm. wide, each being ruled horizontally with fine lines 2 mm. apart, the sixth, seventh, and eighth of the spaces thus made being divided vertically into three parts.

The first vertical column of the headline spaces should contain, in the order named, the following: year, general locality, time out, weather and temperature, prevailing wind, wind of the day, rainfall or snowfall, advance of vegetation, new insects abroad, remarks. The spaces to the right of the year should contain the days of the month, the month itself being written above the upper headline. The remaining headline spaces should contain notes on the heading found in their respective marginal spaces, such notes, if desirable, being written in the abbreviated form suggested in the outline.

In the marginal divisions should be placed the names of the species in the order observed. In the sections should be placed the notes on such of these species as are observed during the day indicated at the top of the vertical row. Each section will, therefore, contain as many of those notes found in the 'Outline of Sectional Notes' as are taken on any one species. The divisions of each section are reserved for the following notes: the first, for the exact locality; the second and third, for the environments; the fourth, for the plumage; the fifth, for the moult; the ninth and tenth, for the food of the young; the eleventh and twelfth, for the food of the adults. The area included in the middle spaces of divisions six, seven, and eight is reserved for the 'Number of

The form consists of a large grid of 10 columns and 10 rows of small squares. To the left of the grid, there are five small circles, each aligned with a row of the grid. To the right of the grid, there are five horizontal lines, each aligned with a row of the grid. Below the main grid, there is a smaller grid of 10 columns and 4 rows of small squares. To the left of this smaller grid, there is one small circle aligned with the first row. The form is designed for recording life history notes of birds.

FORM OF SHEETS FOR RECORDING LIFE HISTORY NOTES OF BIRDS
(8th Nat. Size).

Birds Seen or Heard,' or 'Species Searched For but Not Found.' It will be observed upon close comparison of the subdivisions included under the three captions 'Number of Indications of Mating,' 'Nests and Young,' and 'Indications of Migration,' that notes on no more than five of these subdivisions are probable on one species during one day. For these notes the first spaces of divisions six, seven, and eight, and the third spaces of divisions six and seven are reserved. In the remaining division space — the third space of the eighth division — may be placed the page references to photographs, drawings, additional notes, and résumé. Should this space be needed for another record, the page references to photographs, drawings, additional notes, and résumé may be placed respectively in the upper left, upper right, lower left, and lower right corners of the section. If desirable, any note may be given more prominence by writing it in differently colored ink. In arranging the notes for the above sections we have endeavored to congest them into as small a space as possible, but have found it impractical to confine them to sections smaller than those designated.

In looking down the vertical columns of this form one may note at a glance all the species observed during each day. In looking across the horizontal columns one may note the different days upon which the same species was observed, the different localities that it frequented, the various environments in which it was found, etc.

Each sheet may be made to cover as many spaces in width or length as desirable in each individual case. However large it may be made, it is improbable that the marginal divisions of one sheet will contain all the species observed during the days represented. Other sheets must, therefore, be added of a size equal to the body of this sheet (*i. e.*, with the headline area omitted) and ruled in the same way. These sheets should be made up in tablet form and neatly perforated at the points indicated. Covers should be made a trifle larger than the form, both of which should be hinged with leather or canvas and perforated in the same manner as the sheets, each perforation being provided with an eyelet. The covers and sheets are laced together with an ordinary shoe-lace, thus making it possible to remove the sheets at any time and arrange them

beside each other for study. A key to all abbreviations used is very essential, not only for the observer himself, but especially for those who may in future years have access to his records. A convenient place to put this key is on the inside of the front cover. After enough sheets are completed an index should be made and all laced into one volume.

GENERAL NOTES.

Occurrence of the Arctic Tern (*Sterna paradisæa*) in the Hawaiian Islands.—A weary and wayworn individual of this species was discovered on the beach at Hilo, Island of Hawaii, May 9, 1891. The bird boarded a schooner when four days off port, being evidently much exhausted, but disappeared three days afterwards, having evidently sighted land. It was next seen on the beach by some boys, but was hardly able to fly, and was captured by hand after a short chase. It came into the possession of Mr. R. T. Guard, but died the next day from hunger and exhaustion. Mr. Guard had the bird mounted, and very generously presented it to the writer. The bird was assuming the full nuptial dress, and presumably was on its way to Alaskan breeding grounds when it was lost or blown to sea. After a brave struggle with fate it reached distant Hawaii only to fall a victim to the consequences of its protracted flight.

So far as the writer is aware this is the first American tern to be reported from the Hawaiian Islands, though American gulls are not of very rare occurrence.—H. W. HENSHAW, *Hilo, Hawaii*.

Note on the Name of Audubon's Shearwater.—Lesson in the 'Revue Zoologique' for April, 1839, p. 102, describes a shearwater as follows: "*Puffinus* [sic] *Lherminieri*, Less.—Corpore supra nigro, infra albo, rostro et pedibus nigro.—Long. ; 12 poll.—Hab. ad ripas Antillarum." Finsch, in the P. Z. S. 1872, p. 111, renames this species *Puffinus auduboni*, being led astray by believing Bonaparte's citation of Lesson's name referred to the 'Traité,' in which work it is not to be found. In view of the above facts this species should stand in the Check-List as *Puffinus lherminieri* Lesson—J. H. RILEY, *U. S. National Museum, Washington, D. C.*

European Widgeon (*Mareca penelope*) on Long Island, N. Y.—It gives me great pleasure to record the capture of an unusually fine adult male English Widgeon at Bostwicks Pond, Gardiners Island, Suffolk County,

N. Y., on Wednesday, November 27, 1901. This duck, which was brought to me for identification, was killed by my friend, Mr. Thomas Newbold Rhinelander, while shooting over decoys from an island in Bostwicks Pond. The bird was entirely alone, rather wild and a little shy of the decoys.

On Saturday night and all of Sunday preceding there had been a heavy northeast storm followed on Monday and Tuesday by high northwest wind with clearing weather, and on Wednesday (the day the duck was shot) very high northwest wind, freezing hard. There was an unusually large flight of American Widgeon (*Mareca americana*) during the two days immediately following the storm, many flocks numbering over one hundred birds. A number of American Widgeon were killed. An old resident of Gardiners Island informed Mr. Rhinelander that every year the Widgeon came to the Pond in large numbers but usually later in the winter. The other ducks noted in great numbers were Black Duck (*Anas obscura*) and Red-breasted Merganser (*Merganser serrator*). A great many Black Ducks were also killed. — NEWBOLD T. LAWRENCE, *New York City*.

The Masked Duck in Vermont. — Since the publication of my 'Review of Prof. Perkins's Vermont Birds,' Mr. Samuel Henshaw has called my attention to the fact that the specimen of *Nomonyx dominicus* (No. 482) in the collection of the Boston Society of Natural History has its right wing clipped, and was thus probably not a wild straggler in Vermont, but an escaped tame bird. This evidence is, I think, enough to expunge this record, which has held a place in North American faunal literature since 1858. — REGINALD HEBER HOWE, JR., *Longwood, Mass.*

Rare Ducks in Massachusetts. — While looking over recently an interesting local collection of birds, belonging to Mr. Arthur C. Dyke of Bridgewater, Mass., consisting of birds taken within the limits of that town, I came across two very rare species of ducks for this locality.

Chaulelasmus streperus. GADWALL. — There were two well-marked specimens of this species, in immature plumage, both of which were taken by Mr. Harry Sturtevant, on Oct. 18, 1901, at Nippenicket Pond in Bridge water. They came in to live decoys at a gunning stand on this pond, controlled by Mr. Joseph E. Bassett and Mr. Sturtevant. The Gadwall is a very rare or accidental visitor in this State. So far as I know there is only one other record.

Somateria spectabilis. KING EIDER. — A young male of this species, in Mr. Dyke's collection, was taken by Mr. Joseph E. Bassett at his gunning stand, at Nippenicket Pond, on Oct. 21, 1899. The King Eider is taken occasionally on our coast where it occurs as a rare winter visitor, but has, I believe, never been taken in an inland pond. — A. C. BENT, *Taunton, Mass.*

The Wilson Plover in California.—Mr. A. M. Ingersoll of San Diego has recently sent me a specimen of *Aegialitis wilsonia* taken by him at Pacific Beach, San Diego County, June 29, 1894. The circumstances of its capture were given by Mr. Ingersoll in a brief but interesting article in the 'Nidologist,' Vol. II, Feb., 1895, p. 87. The skin, now before me, is that of a male in worn nuptial plumage. The dorsal surface is particularly worn and faded, the tertials and wing-coverts presenting a truly thread-bare appearance. The measurements are: wing, 108 mm.; tail, 48; culmen, 21.5; tarsus, 29.5; middle toe with claw, 23. As far as I know, this specimen furnishes the only record of *Aegialitis wilsonia* for California.—JOSEPH GRINNELL, *Palo Alto, Cali.*

The Yellow Rail (*Porzana noveboracensis*) in Wisconsin.—Between October 6 and 13, 1901, four Yellow Rails were seen on different marshes near Delavan, Wis., and one specimen was taken October 11. This bird was captured by a pointer and brought to me alive by the dog's owner. It proved to be a male and is an exceptionally beautiful individual. On October 13 I flushed one myself at my feet and carefully marked it down on the scantily grassed, dry marsh not four rods away, but the efforts of two men and two very good bird dogs were insufficient to start it again by the time the shells were changed in my gun, although it was not over a minute before we were hunting him and worked diligently for nearly an hour.—N. HOLLISTER, *Delavan, Wis.*

An Abnormal Specimen of the Bob-white (*Colinus virginianus*).—I shot near Mount Pleasant, S. C., on February 4, 1902, an adult male Bob-white which has nearly the whole throat ochraceous-buff encircled with white. Among the thousands of these birds I have killed, this specimen is the first I have ever seen marked in this manner.—ARTHUR T. WAYNE, *Mount Pleasant, S. C.*

Buteo solitarius off the Coast of Hawaii.—My friend Mr. W. K. Andrews was a recent passenger on a sailing ship from San Francisco to Hilo, and he reports the following interesting occurrence. When 400 miles off the southern point of Hawaii, a hawk boarded the ship, and perched on the top of the mizzen-mast. In a few moments it flew away, and presently returned with a bird in its claws. Mr. Andrews is well acquainted with the Hawaiian Hawk, but wishing to make sure of the identity of this particular individual, he shot the bird. Unfortunately it fell dead just over the side of the ship allowing, however, a good glimpse ere it was swept astern.

Mr. Andrews considers his identification of the hawk certain, and is pretty confident that the hawk's quarry was a plover, it being in plain sight on the water as it drifted past.

Readers of 'The Auk' may remember the report of a somewhat similar case made by the writer in this Journal for April, 1891. That particular

hawk boarded an outward bound ship, and kept with it till the California coast was sighted when it flew to land. During the voyage it lived on small birds which it left the ship to catch.

Can it be that the Hawaiian Hawk has learned of the spring and fall flights of plover, akekeke and other birds that migrate to and from the islands, and that it deliberately makes excursions to sea to capture them? Or are these two cases merely coincidences?

The writer has studied the flight of the Hawaiian Hawk on many occasions, and he does not for one moment believe in its ability to capture flying quarry. If the bird the hawk was eating when shot was actually a plover it must have been seized when on the water—evidence, so far as it goes, tending to prove that the plover sometimes rests on the ocean in its passages between the American and the Hawaiian coasts.

That the ducks occasionally rest on the ocean in their migrations, Mr. Andrews is able to state positively, as he saw a pair settle contentedly on the ocean a thousand miles from land as if for a long rest.—H. W. HENSHAW, *Hilo, Hawaii*.

Unusual Nesting Date of the Barn Owl (*Strix pratincola*).—During the fall and early winter of 1900 several Barn Owls established a residence in two or three large red oaks in our back yard. These trees were peculiarly fitted for such birds, as the ravages of time and the elements had produced several very large cavities in each tree. I had watched the birds, as best I could, with much interest. They were active only after nightfall. I expected to find a set of eggs in February. The nights were made hideous with their stentorian notes and I began to regard them as something of a nuisance but bore in mind the probability of a set of eggs entirely new to my collection, so I suffered the birds to remain unmolested. We have a number of domestic pigeons and their houses stood very close to the trees mentioned, but experience had shown the owls to be perfectly harmless and I had nothing to fear from this source. However, a pair of pigeons had nested for some months in a large cavity in one of the trees, from which they were driven by a pair of owls. This circumstance led me to look with more confident hope for a set in February. But my hopes were blasted. So I then thought it necessary to remove the trees; their dying condition demanded this course. They were cut on the 10th day of December, 1900, and on the 12th the woodmen while cutting the trees into sections found five eggs in the cavity heretofore referred to as the erst-while home of the pair of pigeons. Three of the eggs were irremediably cracked, the others badly so. They must have totally perished but for the mass of decayed vegetation, the accumulation of years, in the bottom of the hollow. This cavity was upwards of eighteen feet from the ground, about two feet in circumference, with a depth of three feet, and was on the north side of the tree, which stood directly south of the back porch and not more than thirty feet therefrom. One egg was fresh, two were infertile, and two were slightly incubated. I

preserved three, which present the following measurements: 1.80×1.35 , 1.71×1.36 , 1.74×1.36 . — R. W. WILLIAMS, JR., Tallahassee, Florida.

Nyctea nyctea on Long Island, New York. — Snowy Owls have visited Long Island in considerable numbers during the past winter. I have heard of their being either seen or killed at several different places and four fresh birds have been sent to me from Montauk Point, obtained on the following dates: December 31, 1901, January 6, 1902, January 21, 1902, and February 6, 1902. It is several years since these northern visitors have been so abundant. — JONATHAN DWIGHT, JR., M. D., New York City.

Belted Kingfisher in the Island of Hawaii. — Early in November of 1901 Mr. Harry Patten of Hakelau informed me that a pair of Belted Kingfishers (*Ceryle alcyon*) had appeared in Hakelau Gulch, some fifteen miles north of Hilo. On the 27th of the month, Mr. W. K. Andrews of Honoumou visited the locality, and, finding only the female, secured her, kindly presenting the specimen to the writer. The other bird in the meantime had disappeared, having probably been killed.

As the second bird is reported to have been somewhat differently colored it was probably the male. It is hardly likely that the pair would ever have found their way back to the mainland and, had a kinder fate directed them to a more solitary spot, they might have survived and reared young to populate the islands. Most of the island streams contain small fish and shrimps, and there would seem to be no reason why the kingfisher should not thrive here, although its field would be limited.

So far as the writer is aware this is the first occurrence in the group of this or, indeed, of any kingfisher. Evidently the pair drifted down here from the mainland coast during the fall migration, and their occurrence here, like that of so many other American species, is purely accidental. Yet it is through just such accidents that the islands have received, from several sources, their avian inhabitants. — H. W. HENSHAW, Hilo, Hawaii.

A Winter Record for the Flicker (*Colaptes auratus luteus*) in Berkshire County. — In 'The Birds of Berkshire County,' by Dr. W. Faxon and Mr. R. Hoffmann, the latest autumn date for this species is given as October 24, and the earliest spring record as April 10. We observed at Williamstown on December 12, 1900, a single bird which may have been wintering, and on April 6, 1901, the first Flicker arrived. — FRANCIS G. AND MAURICE C. BLAKE, Brookline, Mass.

The Winter Fringillidæ of New Brunswick. — The list of birds given below includes the members of the Finch and Sparrow family which occur in New Brunswick during the months of December, January, and February. During these three months migration is as nearly at a standstill as at any time during the year. This family is represented by more species than

any other family of birds, eleven species occurring here during the winter months, in greater or lesser numbers, being sometimes plentiful and even abundant and in other years rare.

The year 1901 has brought several surprises, the regular winter birds having been rather scarce, while two species which do not ordinarily occur here till late in March, and another not till mid May, have been more plentiful than any of the regular winter birds, except probably the Black-capped Chickadee and Red-breasted Nuthatch.

Pinicola enucleator. PINE GROSBEAK. — This is a rare summer resident as far south as Fredericton, N. B. They come south in autumn in flocks varying in number from three or four to fifty. By people little acquainted with birds they are often mistaken for the Robin. In fact, they have been called 'Winter Robins' by some ornithologists.

Their habit of living in summer in coniferous forests, generally far from the haunts of man, causes them to have little fear of him when they come south, and one may approach quite closely to examine them. When they are feeding one may often get quite up to the tree in which they are resting.

Their food in winter consists of almost any of the persistent fruits. A favorite food is the seeds of the ground ash, which they pick from the trees and even from the ground where they have been blown by heavy winds. This winged fruit they dissect, taking only the meat. Small apples are also eaten. At times the pulp is cast away and only the seeds eaten, and again their crops have been found to contain the pulp.

They also feed upon the fruit of the sumach. Their never failing diet is the tips of fir twigs, the buds which produce the next season's growth. These are bitten off, and to reach them the birds at times hang nearly up side down, as the lithe limbs bend with the weight of the birds. When this food has been eaten the bill is covered with balsam. Elm buds also are eaten after they begin to swell in spring.

The flight of the Pine Grosbeak is slightly undulating, and when on the wing they often give forth a soft loud whistle by imitating which they may be induced to alight nearby.

Some ornithologists claim that this species nests far north, and so early in spring that the eggs are laid before the snow has gone. This may be true, but it is also true that they breed in New Brunswick in the month of July.

Carpodacus purpureus. PURPLE FINCH. — This species is in appearance a small edition of the Pine Grosbeak. The males very much resemble each other in color, but the females and young of the Purple Finch lack the yellowish breast and rump of the Pine Grosbeak. The earliest record the writer has for the arrival of this species from the south is February 5, 1901, which is fully seven weeks earlier than is usual for the spring migrants to arrive. Even at this early date they were singing, but the song lacked the energy that is given it during the nuptial season. The song of the young male is not so rich as that of the adult, consisting of a

few short notes in place of the long flowing song of the full plumaged adult male.

Their food, after arriving in spring, is buds of various trees, the favorite being the poplar and the balsamy buds of the fir; later insects are added to the bill of fare. Although arriving early from the south the nesting season is deferred till after the middle of June.

Passer domesticus. ENGLISH SPARROW.—This species lives in winter in towns and villages, the families which are raised throughout the country in summer flocking to their winter quarters during October.

Loxia leucoptera. WHITE-WINGED CROSSBILL.—This species may be termed a rare winter visitor in the vicinity of Fredericton, yet they are known to live in summer in the northern highlands of this province. They feed upon the seeds of spruce, black alder and birch. The song, which is much like the song of the Purple Finch, is poured forth while the bird is on the wing, and also while the bird is at rest. During the winter of 1899-1900 this species was common here.

Acanthis hornemannii exilipes. HOARY REDPOLL.—This species has been taken at Peticodiac, in the eastern corner of New Brunswick, and is considered very rare.

Acanthis linaria. REDPOLL.—Both sexes of the Redpoll are much alike, the males being distinguished by the pink tinge on the feathers of the breast. They are very lively little birds, and seem to be cheerful in sunshine or storm. They feed on weed seeds as long as any weeds remain above the snow. The seeds of various trees are also eaten, such as those of the black alder and yellow birch. The writer has had the experience of watching Redpolls feed on seeds put out for them. They would feed for several hours daily, and would take fifty seeds per minute. So erratic are these birds in their choice of a winter home, that one winter they may be abundant with us and not be seen again for years, or they may appear in autumn, pass on, and not be here again till the next winter.

Spinus tristis. AMERICAN GOLDFINCH.—During the winter of 1900-01 Goldfinches were observed here February 15, a very unusual occurrence, the general time of arrival being in the month of May.

Spinus pinus. PINE FINCH.—This species, like the Redpolls, is so erratic in movements, that one can never know whether or not it will occur during the winter season, yet it is during the winter that we are most sure of its presence. They feed largely upon the fruit of the yellow birch and cedar.

Plectrophenax nivalis. SNOW BUNTING.—This is the most easily recognized of any of our Fringillidæ of either summer or winter. Their food consists of seeds of weeds and grasses, of which they get an abundant supply on haystacks. They are most abundant along river valleys. It has been alleged by some writers that Snow Buntings never perch on trees, but it is not uncommon to see them resting on trees when not feeding.

Spizella monticola. TREE SPARROW.—This is our only winter sparrow,

that does not congregate in flocks while with us, they being seldom seen in companies of more than two or three. They are not common during winter and are only found at that season along river valley roads that are fringed with coniferous bushes.

Junco hyemalis. SLATE-COLORED JUNCO.—This season (1901) is the only time the writer has observed this species here so late in the year, one being observed December 4, during a heavy snowstorm. It seemed as happy as if it had just arrived from the south in April.—W. H. MOORE, *Frederickton, N. B.*

The Occurrence of the Lapland Longspur (*Calcarius lapponicus*) in Mid-winter in Massachusetts.—On January 12, 1902, the writer, with Mr. H. M. Spelman and Mr. R. S. Eustis, found between forty and fifty of these birds at Ipswich. Four or five were on a hillside about half a mile from the beach, and the remainder among the sand-dunes by the sea. The day was stormy and cold, the fine snow blowing and drifting so that the beach grass on which they were feeding was more or less covered. Perhaps on this account the birds were tamer than usual and allowed a close approach. The Longspurs were alone, and also associated with Horned Larks and Snow Buntings. Three Ipswich Sparrows were seen with them.

It is not uncommon to find the Longspurs in the early part of December in Ipswich. Thus I have records for December 10, 1898, and December 8, 1901.—CHARLES W. TOWNSEND, *Boston, Mass.*

The Lapland Longspur Wintering in Massachusetts.—In our 'Birds of Massachusetts' (1901), Mr. Reginald Heber Howe, Junior, and the undersigned, gave, as the only instance known to us of the wintering of the Lapland Longspur in the State, the record of one from Ipswich, Jan. 6, 1877. This specimen with above date on the label, is preserved in the mounted collection of the Boston Society of Natural History. By a mere chance the fact came out that this specimen, which was presented by Messrs. E. A. & O. Bangs, was probably from the same lot of birds, bought at the Boston Market, from which came the McCown's Longspur, credited by Mr. C. J. Maynard to Massachusetts. It appears that the market-man of whom the specimens were obtained, when asked if they came from Ipswich, replied, as he naturally would, in the affirmative, and it seems reasonable to believe that these two birds were in reality from the West, and that there are no actual winter records for the State. Lately, however, Mr. Howe, in company with Mr. Louis Agassiz Shaw, while at Ipswich on the 18th of January, 1902, took one, and saw at least five others, so that we are now able to give the species unquestioned standing as of at least occasional occurrence in Massachusetts in winter.

While on three trips to Ipswich during the autumn of 1901 (Oct. 22, Nov. 9 and 28) Mr. Howe found Longspurs in unusual abundance, and apparently, as this season has been comparatively mild, a proportion have

remained to winter with the Snow Buntings and Horned Larks.—GLOVER M. ALLEN, *Cambridge, Mass.*

The Savana Sparrow Wintering in Massachusetts.—On January 18, 1902, with Mr. Louis Agassiz Shaw, I took a male *Passerculus sandwichensis savanna* at Ipswich, Mass. The bird was entirely alone when shot, in the belt of beach grass which separates the dunes from the beach. This is the third wintering record for the State, it having been previously recorded from Sandwich and Longmeadow.—REGINALD HEBER HOWE, JR., *Longwood, Mass.*

The Ipswich Sparrow (*Ammodramus princeps*) on the Coast of South Carolina.—It is with much pleasure that I am at last able to record this interesting bird as a winter resident for South Carolina. Having searched for this sparrow most diligently every winter for the past thirteen years upon all the coast islands from Charleston to Bulls Bay and having failed to discover the bird, I became convinced that the coast islands were not to its liking and that the proper place to look for the bird with success would be a 'Key' or the farthest point of land out in the ocean. Eight years ago I sent a stuffed specimen of this bird, together with some ammunition, to the lighthouse keeper at Cape Romain, S. C., but he was unsuccessful in obtaining or seeing the bird. On January 20, of this year I sent a skin of the Ipswich Sparrow, together with ammunition, to Mr. D. L. Taylor and wrote him when to search for the bird. On February 6, he sent me in the flesh, three beautiful specimens which he secured the day before at Keys Inlet, Bulls Bay, S. C. In his letter dated February 6, Mr. Taylor writes as follows: "Enclosed in box you will find some birds; three of them I am sure are the right ones, but they were all together. I have been hunting them, but the only place I found these was at Keys Inlet. They are very scarce—there were only a few." Of the three birds sent me one was a male and the others females. This bird can only be classed as a very rare winter visitor.—ARTHUR T. WAYNE, *Mount Pleasant, S. C.*

The Ipswich Sparrow (*Ammodramus princeps*) on the Mainland of South Carolina.—I shot an adult female of this sparrow on March 4, 1902, from the top of a bush, on the edge of an oat field, near a sandy spot. I suspected that the bird was a very pale-colored Savanna Sparrow, and to make the identification absolute I fired and wounded the bird which proved to be the long sought for Ipswich Sparrow. The specimen was taken within less than 100 yards of the spot where I shot the specimen of *Anthus spragueii* on November 17, 1900, and seven miles from the ocean. If I have read the records of this bird correctly, this specimen makes the third which has been taken "out of sight and sound of the sea."—ARTHUR T. WAYNE, *Mount Pleasant, S. C.*

A Remarkable Specimen of Bachman's Sparrow (*Peucaea aestivalis bachmanii*).—I shot on February 5, 1902, an adult female of Bachman's Finch which has *thirteen* rectrices. The bird may have had more, but upon closely examining the ground where it fell I failed to discover any more tail feathers. In the family Fringillidæ the rectrices always number *twelve*, but this specimen, taken near Mount Pleasant, S. C., is indeed an anomaly.—ARTHUR T. WAYNE, *Mount Pleasant, S. C.*

Henslow's Sparrow on Shelter Island, N. Y.—On November 20, 1901, as I was crossing a rather barren, hilly pasture field, with a somewhat sparse covering of grass, I was much surprised on flushing a small brown sparrow, on which I had almost placed my foot in taking a step, which I at once recognized by the peculiar corkscrew flight as *Ammodramus henslowi*, having observed and taken numbers of them in the Southern States. A snap shot at long range (my astonishment at seeing the species so unexpectedly having banished at first all thought of shooting) wounded, but failed to kill, and the bird dropped flutteringly into another bunch of grass, and was out of sight in an instant. Knowing their habits, I thought the specimen lost to me, but rushing to the spot and stamping quickly about, thanks to the scanty grass, the specimen was flushed again, and finally secured, making the first record for eastern Long Island. The bird was a female, and in good condition. I took an Ipswich Sparrow on the same day, and another Nov. 22, and on December 18 a Lapland Longspur.—W. W. WORTHINGTON, *Shelter Island Heights, New York.*

The Field Sparrow in Arlington, Mass., in Winter.—On February 14, 1902, I saw a small sparrow on the Arlington Heights which I am confident was a Field Sparrow (*Spizella pusilla*). I watched him at close range through my glass for fifteen or twenty minutes, and got all his markings, including the peculiar color of his bill. In size he was distinctly smaller than a Junco with which he was feeding, while the Tree Sparrow, the only other bird I know with which I could have confused him, is larger.

I have also seen, off and on all winter, two Red-winged Blackbirds (*Agelaius phoeniceus*), four or five Swamp Sparrows (*Melospiza georgiana*), and one Long-billed Marsh Wren (*Cistothorus palustris*) in the Fresh Pond Marshes, Cambridge, Mass.—RICHARD S. EUSTIS, *Cambridge, Mass.*

The Length of Life of the Chipping Sparrow and Robin.—It is so rarely that one gets a chance to estimate the length of life of many of our birds that this bit of information may be worth presenting. The late Prof. Alpheus Hyatt has kindly sent me the following note on the Chipping Sparrow (*Spizella socialis*) from a friend of his, Mrs. H. S. Parsons, who lives in Annisquam, Mass. "The bird you wish to know about," she writes, "came to notice first in the door yard. It seemed quite tame and

would not fly when crumbs were thrown out. Then I began to feed it from my hand, and it soon became so tame that it would fly to meet me, and would come in at the open door or window. I would call it to me at any time if it was within sound of my voice. It went away in October and returned the last of April. It would come to the doorstep all ready for crumbs and would light on my hand and peck a piece of cake. I would have known it from its manner, but it had lost a joint of one toe, which I thought a sure mark. It would always bring its young to the door, and sometimes into the house, and they, too, would be very tame. One summer it brought with its own a young bunting and fed it, a much larger bird than the sparrow. The chippy came *nine* summers and the last one one morning after a cold rain storm the last of May, came to the window seeming weak and sick. We fed it but it grew weaker and in a few hours it died." I have a like story reported to me from Milton, Mass., where a Robin returned for four years.—REGINALD HEBER HOWE, JR., Longwood, Mass.

The Cardinal an Established Resident of Ontario.—In September I spent four days, 17th to 21st, in company with my cousin, Mr. H. H. Keays at Point Pelee, collecting. Nearly every evening of our stay the fishermen gathered around our camp fire, apparently much interested in us as strangers and in our work; after telling us of the strange birds they had seen on the point (their descriptions of which were usually too complicated for us to make more than a guess at the species) one of them asked us of a bird that made its appearance about four years ago and had since been quite common, stating that it was a splendid whistler, and that an old lady in the vicinity had caught a number of them and sold them for cage birds, catching them in a cage trap and using the first one taken as a decoy for more. From his description we concluded it must be the Cardinal (*Cardinalis cardinalis*), and sure enough, on the following day we secured one, a young male in moulting plumage. Twice afterwards we heard near our camp, just at dawn, the call note of what we decided must have been this bird.

Without doubt the Cardinal has come to stay at Point Pelee, nor could they select a more suitable place, the cape being quite plentifully covered with red cedar, and the weather remaining mild in fall longer than on the mainland, on account of its proximity to the lake, as is evident by our having no frost during our stay, while on our return we noted the corn well bleached on the mainland.

It is to be hoped, however, that it will not restrict its range to the point nor to the shores of lake Erie in Ontario, as this bright plumaged bird will make an acceptable addition to our fauna.

Dr. McCallum says a few of this species are seen along the lake shore every summer near Dunnville (McIlwraith 'Birds of Ontario'). Inland we have but few records of stragglers, which in the vicinity of London

are as follows: One shot at St. Thomas, spring of 1890, by Mr. O. Foster; one taken in a cedar swamp a mile from London, Nov. 30, 1896, this being the first record for Middlesex County, and which is made complete, as far as I am able to ascertain, by a second taken at Kilworth by Mr. John Thompson, Nov. 17, 1899, both these birds being males. The Rev. C. L. Scott reports one shot near Aylmer, Elgin County, about October, 1900. From Guelph one is reported by Mr. F. N. Beattie as spending the winter of 1899 around his place. Other reports come from Chatham and Rond Eau, all of single specimens and apparently stragglers.—J. E. KEAYS, *London, Ont.*

The Philadelphia Vireo in Western Pennsylvania.—I took a Philadelphia Vireo (*Vireo philadelphicus*) near Shields, Pa., on September 6, 1901. This bird occurs as a rare migrant in Allegheny Co., Pa., where I took the specimen mentioned above. The only other record of its capture in this county that I am aware of, is a specimen taken by Mr. G. A. Link at Pittsburg, May 15, 1900. Another was taken near Industry, Beaver Co., an adjoining county, in 1891, by Mr. W. E. Clyde Todd.—D. LEET OLIVER, *Concord, N. H.*

Observations of a Pair of Mockingbirds seen during the Summer of 1901 in Solebury Township, Bucks Co., Pennsylvania.—The following notes on a pair of Mockingbirds were made by Mr. Wm. Ely Roberts of New Hope, Bucks Co., Penna. Mr. Roberts is at present a student in Swarthmore College and is a very reliable observer.

"This pair of Mockingbirds was first seen by myself on June 17, 1901, in Solebury Township, Bucks Co., Pa., about my home, which is two and a half miles west from New Hope and a mile in a direct line from the Delaware River. I was on my way from college and noticed the pair fly out from an osage hedge that extended past my home. I had never seen any birds around that were marked similar to these. Upon looking them up in a Warren's 'Birds of Pennsylvania' I found that their markings corresponded to those given by Warren for the Mockingbird. My brother had seen them two days previous and my father had also seen them several days before that. The road marks a divide between two creek valleys. It is possible that the birds followed one or the other of the streams and found things so to their liking here that they stayed to nest. The birds seemed tame, flew about our yard among the pines, and were undisturbed by the wagons on the road.

"As I was at work on a farm during the birds' stay, I had chance to observe them only in the early morning or evening and at such other times when in the fields adjoining the house. This accounts for the lack of several important dates. I do not know when the nest-building was begun. I thought, however, from the actions of the birds that it must be going on. So on July 7, at my first opportunity for search, I found the nest about thirty yards from the house, on the north side of the low

hedge. It then had the full complement of eggs (four) and was about four feet from the ground and probably six inches down in the hedge. Sticks lined with horse-hair composed the nest. There was no difficulty in discovering its location, for the male himself showed where it was by flying to a particular place and remaining there just long enough to have given something to the female and then flying back again to his perch. I could not tell whether he did actually feed the mate or not, but his actions so indicated. Pie cherries were ripe just at this time, on a tree close by, and seemed to be their principal food.

"The male could mimic to perfection the notes of the Killdeer, the Bluebird, and the Bluejay. I noticed five others in his repertoire, those of the Orchard Oriole, the Catbird, the Flicker, the Plover [Grass Plover, *Bart-ramia longicauda*], and the Robin. I saw the old birds no more after the last week in July and the young not at all."

The Mockingbird was formerly much more abundant in the northern portion of its range than it is to-day. In the time of Alexander Wilson it appears to have been a more or less common bird in the vicinity of Philadelphia, as the following extracts from the 'American Ornithology' (Vol. II, pp. 13-24) attest:

"They are, however, much more numerous in those States south, than in those north, of the river Delaware; being generally migratory in the latter, and resident (at least many of them) in the former." The following remark bears on this point: "Though rather a shy bird in the northern states, . . ." Again, on page 14 " . . . Neither the Brown Thrush, nor Mockingbird were observed, even in the lower parts of Pennsylvania, until the 20th of April. . . . In the lower parts of Georgia he commences building early in April; but in Pennsylvania rarely before the tenth of May; and in New York, and the states of New England, still later." In another place the following statement occurs: "A person called on me a few days ago with twenty-nine of these birds, old and young, which he had carried about the fields with him for several days, for the convenience of feeding them while engaged in trapping others. He carried them thirty miles, and intended carrying them ninety-six miles further, viz. to New York; . . . The eagerness with which the nest of the Mockingbird is sought after in the neighborhood of Philadelphia, has rendered this bird extremely scarce for an extent of several miles around the city. In the country around Wilmington and Newcastle they are very numerous, from whence they are frequently brought here for sale."

Wilmington and Newcastle are in the State of Delaware and situated on the river about thirty miles south of Philadelphia. In a letter from William Bartram, which Wilson quotes, is the following statement in regard to the wintering of this species in the neighborhood of Philadelphia: " . . . formerly, say thirty or forty years ago, they were numerous, and often staid all winter with us, or the year through, . . ." Bartram says further: " . . . many would feed and lodge during the winter [in a European ivy on his house, the famous Bartram Mansion built by the

elder Bartram in 1731 and still standing, on the western bank of the Schuylkill, now within the limits of Philadelphia] and in very severe cold weather sit on the top of the chimney to warm themselves."

From these statements two facts are obvious. First, that the Mockingbird was abundant in the Lower Delaware Valley, in the early part of the last century, and like other Carolinian species was more or less resident throughout the year on the northern limits of its range. Second, that the persistent trapping of the bird tended, without doubt, as Wilson suggests, to increase its scarcity in these districts. Nothing appears so to diminish the number of individuals of a bird species as the untiring zeal of nest-hunters, especially with the object of solid cash in view. This, and the rapid and widespread clearing of land in the coastal plain region of the Middle States, has undoubtedly driven this enchanting songster from its former haunts. But some it would seem have a memory and are of a mind to come back. I have heard of a few others besides Mr. Roberts's pair; one pair that nested in Chester Co., Penna., a few years ago, and then there is the pair reported by Mr. Chapman, from Englewood, N. J. ('Auk', 1889, Vol. VI, p. 304). We shall be interested to hear from Mr. Roberts after next summer, and all of us will entertain the hope that these stragglers are spies sent out to view the land and that the prince of song may again enlarge his borders.—SPENCER TROTTER, *Swarthmore College, Penna.*

The Catbird (*Galeoscoptes carolinensis*) in Massachusetts in Winter.—Just below my house in the northern part of this city is an old pasture grown up with huckleberry, sheep laurel and other bushes, and at the further end is a birch thicket with a tangle of briars and some sumach. While passing this birch thicket about 2 P. M. on January 11 last, I heard a note much like the mew of a Catbird, but uttered in an excited, continuous manner, more like the notes of that bird when suddenly finding an intruder near its nest. On approaching over the two inches of snow, I was much interested to see a Catbird jump up into one of the bushes about fifteen yards away from me. I at once made the identification sure by using my glasses. The bird was in sight several minutes, passing by short flights to a thicket across the street. While in sight it uttered its mewing note not over two or three times. This was a fine spring-like day with a light southwest wind.—OWEN DUFFEE, *Fall River, Mass.*

The Catbird Wintering at Concord, N. H.—On Dec. 3, 1901, while walking through an extensive wood near Concord, N. H., consisting principally of scrub pine, I was very much surprised to see a Catbird (*Galeoscoptes carolinensis*) hop out of a small scrub-pine, and perch directly in front of me in a bare bush within ten feet of my face. He uttered no note, but flitted up his tail, giving me a view of his brown under tail-coverts, and was gone. I did not have a gun with me at the time so I had no means of securing him, nevertheless there can be no doubt as to

his identity. He was undoubtedly wintering where I saw him in the sheltered scrub-pine wood. The afternoon that I saw him there were several inches of snow on the ground and the thermometer was way below freezing.—D. LEET OLIVER, *Concord, N. H.*

The Carolina Wren at Lake Forest, Illinois.—On the morning of August 13, 1900, I was awakened at five o'clock by the loud, ringing whistle of this bird (*Thryothorus ludovicianus*) just outside my window. It is a curious fact that the songs of our familiar birds do not rouse me when I am asleep but a strange voice will waken me at once. The Carolina Wren I had known well in the Southern States, but never here in Lake Forest, on Lake Michigan, thirty miles north of Chicago.

From August to October 10 I had heard his loud, scolding, *cack, cack*, and his whistled *chee-o-kee chee-o-kee chee-o-kee* at intervals, but did not see the bird till that day, when I had a fine view of him. I heard him up to October 13 that year. June 27, 1901, he was here again, or perhaps it was another, but I think it was the same one. August 9 my notes say: "He has been here at frequent intervals since June 27, and several times I have seen two birds." Whether they were a pair or not I do not know. November 24 he was whistling again, and this morning December 17, his scolding note was heard just outside my door, where he was sitting on our woodbine, jerking his tail, and scolding at the bitter cold with his usual animation. At times, however, he would sit on his feet to keep them warm, for it was only 1° above zero, and it had been —13° two days before. He stayed on the woodbine about ten minutes, and seemed to be stripping a little bark off of it to eat. There were no berries where he was. It looks as if he were going to winter here and next summer I shall be on the watch for a nest.—ELLEN DRUMMOND FARWELL, *Lake Forest, Ill.*

Eastern Bluebird at Cheyenne, Wyo.—I was greatly surprised at early dawn on Nov. 14 last, to hear the well-known notes of the Eastern Bluebird (*Sialia sialis*) which I had neither seen nor heard for many years. I discovered the author of them sitting upon the electric light wire not more than twenty feet from my house. The bird proved to be a male in typical winter plumage. On Nov. 24, ten days later, I secured another male. Both of these birds had been eating the blue berries of the woodbine which covers the front of my home. These two specimens are the first actual captures of the bird by me in Wyoming, and may be the first records for the State.—FRANK BOND, *Cheyenne, Wyo.*

Michigan Bird Notes, 1901.—*Pandion haliaëtus carolinensis*. AMERICAN OSPREY. — On Sept. 18, 1901, I received in the flesh a female, young-of-the-year, of this species. It was shot by Mr. Edwin Avery at Waterford, Oakland County. Although a common bird in certain parts of Michigan, this is, I believe, the first record for Oakland County.

Aquila chrysaetos. GOLDEN EAGLE.—An adult male of this species was shot in Eton County on August 12. Although not a new bird for this locality, it is so rare that I believe it worth recording. This specimen is in the collection of Mr. Charles Freiburger of this city.

Strix pratincola. AMERICAN BARN OWL.—This species is exceedingly rare in all parts of Michigan. I have, however, two records which have never been given before, one of a female shot near the marshes at the lower end of the Detroit River, now in the possession of Mr. C. R. Champion, a taxidermist. The other is a male in the possession of Mr. L. J. Eppinger of this city, also a taxidermist. The latter specimen was shot at Port Mouillee on Oct. 29.

Nyctala acadia. SAW-WHET OWL.—An adult male of this species was shot and given to me by a farmer in Grosse Point Township on Dec. 26. As I can find no previous record of this species I believe it new for Wayne County, the nearest record which I can find being a set of eggs recorded by Dr. W. C. Brownell (O. & O., Vol. XVI, p. 22) taken in Oakland County by W. A. Davison of this city. This skin is in my collection.

Nyctea nyctea. SNOWY OWL.—This rare owl has been commoner in southern Michigan this winter than it has been in the past ten years, local taxidermists having received about fifteen.—ALEX. W. BLAIN, JR., *Detroit, Mich.*

Bird Notes from Long Island, N. Y.—**Seiurus motacilla.** At Cold Spring Harbor, April 13, 1901, I secured a fine male Louisiana Water Thrush. The specimen is now in the collection of the Museum of the Brooklyn Institute.

Seiurus noveboracensis. A pair of Water Thrushes made their home during the past summer about the lower pond at Cold Spring Harbor. I saw them every week or two for the entire summer but cannot be positive that they nested there, although on one occasion (June 15) I felt sure that I saw them carrying nesting material. They were at all times very shy and wild.

Vireo philadelphicus. September 14, 1900, I secured a specimen of this rare bird (for Long Island). It was one of the hurrying throng of thousands of migrants seen on that morning and was not recognized until later in the day when it was made up into a skin. The specimen is now in the collection of the Museum of the Brooklyn Institute.

Geothlypis agilis. The Connecticut Warbler was unusually abundant during the latter part of September, 1900, in the vicinity of Jamaica South. Ten specimens were taken by the writer and many were seen.—GEO. K. CHERRIE, *Museum of the Brooklyn Institute, Brooklyn, N. Y.*

Winter Notes from Louisiana.—Observation during the winter months at New Iberia, Louisiana, has shown that there are some substantial differences between the winter avifauna there and that at New Orleans. New Iberia is 125 miles west of New Orleans, and is in a section of the

State where several kinds of country blend, the prairies of the western part, the rolling country of the upper part, the swampy or level woodland of the eastern parts of the State.

Judged from the standard of the winter bird life about New Orleans, the conditions here are rather contradictory; the Gnatcatcher, which is unusual as a winter bird at New Orleans, is regular here as a winter resident and might be called almost common; on the other hand, the Brown Creeper has appeared in some numbers in a live oak grove; at New Orleans it is a rare bird. So New Iberia appears to combine the advantages of both a lower and a higher latitude than New Orleans.

The Orange-crowned Warbler has been present in as large numbers as it is common to find it at New Orleans. The first was noted on November 19; at about this time (the end of February) the last are being heard. But much commoner than it is ever known at New Orleans is the Pine Warbler; like several other of the winter birds this bird is fond of the live oak groves; there it mixes freely with the Kinglets, Orange-crowned Warblers, Titmice, and Brown Creepers. Pine Warblers are fearless, and may be observed as they feed on the ground. Dull colored individuals are the commonest, but now and then a male in good plumage may be noticed among the little flocks; as the only yellow-breasted bird of winter he is conspicuous. Myrtle Warblers have been scarce through most of the winter, but the appearance of transients was noted February 13. The first transients of this species always appear about the middle of February in southern Louisiana.

Particularly since Christmas, Rusty Grackles have been very abundant; many Bronzed Grackles have been with them; that species is evidently the regular winter resident here; at New Orleans it is practically unknown at all times of the year, the Florida Grackle being the regular form there.

Goldfinches were the last winter residents to come; the first were noted not in cold weather, but on an Indian summer day that was one of the warmest of the late fall, November 26.

The remainder of the winter birds are the ordinary ones in this part of the country: White-throated Sparrow (in great abundance), Swamp Sparrow, Savana Sparrow, Phæbe, Robin, Winter Wren, Cedarbird, and American Pipit. The assemblage of these species is swelled of course, by the presence of various common residents: Cardinal, Towhee, Thrasher, Blue Jay, Red-headed Woodpecker, Carolina Wren, etc.—
HENRY H. KOPMAN, *Covington, La.*

Northern Birds at Cumberland, Md.—On December 6, last, I took a walk along the Potomac, at a place where the banks are wooded, between the river and the old Chesapeake and Ohio Canal. I had at former occasions, but much later in winter, seen flocks of Purple Finches (*Carpodacus purpureus*) and other northern birds there feeding on the sycamore apples. On this day also there were Purple Finches about, and their clear notes could be heard at different places. When I came to a small

water course, coming through an adjoining field into the river, the sides of which are covered by bushes, vines and several trees, up came from the ground, where they had been feeding among the bushes and weeds, a flock of about eight Redpolls (*Acanthis linaria*). They perched on a little sapling, closely together, about twenty feet from me and I eyed them intently through a glass, but after a few moments they flew up into a tree, about fifty feet high, and thence, after a few moments, away and did not alight again as far as I could see. I saw their crimson caps plainly, they fairly glowed in the bright light of this clear, frosty day.

On February 5, last, I saw at the same locality a flock of about eight American Crossbills (*Loxia curvirostra minor*). They were not feeding just then and were shy. They allowed me to take one good and longing look at them and immediately departed for regions unknown. This was the first week of the long, cold spell we had this winter, lasting through the whole of February.

Some more northern visitors were here this winter, which I had never before seen. On November 16, last, while walking over a common or old meadow at the base of Wills Mountain, I flushed a fine Snowflake (*Plectrophenax nivalis*). It was not at all shy and allowed of close approach. It was not cold that day, about 32°, and there had been no storms or snow before. It must have become separated from its companions by mistake, for I could see no more that day. On February 8, however, at the same place, right near houses, I saw three more Snowflakes, their feathers more soiled than those of the one seen in November. At this time also it was very cold with much snow on the ground and at times stormy.

It may also be worthy of mention, that during this cold spell, at which the proverbial 'oldest' resident was surprised, there were hundreds of Prairie Horned Larks (*Otocoris alpestris praticola*) about the city, even, on account of the snow covering all fields and hills, coming into the streets of the city and sharing with the English Sparrows their usual delicacies of this and other seasons. They usually are here somewhat later and are then found first on the bare spots on the hillsides, where the snow has melted.—G. EIFRIG, *Cumberland, Md.*

February Water Birds of Elsinore Lake, California.—**Colymbus holbælli.** HOLBÆLL'S GREBE. — We had hardly expected to find this grebe on Lake Elsinore, but were pleasantly surprised by finding a dead specimen on the shore. It was much decomposed but was plainly an immature bird just getting the adult plumage.

Podilymbus podiceps. PIED-BILLED GREBE. — It seems rather strange that we should not have seen either of the typical Californian Grebes, although of course they might have been there without our knowledge. The pied-billed variety was common all over the lake, keeping well out from shore, however, as they were much shot at.

Larus occidentalis. WESTERN GULL. — These gulls, as well as all others, were very rare on the lake: the result of much persecution. We saw but two or three during our stay.

Sterna maxima. ROYAL TERN. — There was but one flock of these on the lake, numbering about fifteen. They appeared to feed on the rotting vegetation along the lake shore; a rather unusual thing for a tern, I should think.

Pelecanus trachyrhynchus. WHITE PELICAN. — These birds have hitherto been one of the commoner birds of Elsinore Lake, but this year (1902) there has been but one flock of five. It is a fine sight to see a flock of these pelicans rise from the water, with slow beats of their great black-tipped wings.

Merganser americanus. AMERICAN MERGANSER. — I saw but one of these ducks, although they are said to be fairly abundant. It was a drake in full summer plumage and, being quite close, I easily identified him.

Anas boschas. MALLARD DUCK. — Although supposedly common, we saw but three or four of these, and attributed their scarcity to the lateness of the season.

Anas americana. WIDGEON. — Widgeons abounded in all parts of the lake and their shrill yet mellow whistle, sounding like the syllables *hue, hue, hue*, with a strong accent on the second, was to be heard from every side.

Nettion carolinensis. GREEN-WINGED TEAL. — This beautiful little duck was common, though scattered over all the shallower parts of the lake. They seemed to spend over half their time on land, sunning themselves on the flats.

Spatula clypeata. SHOVELLER. — These handsome birds were the most in evidence of all the ducks. Their rattling cries were deafening when a flock rose, mingled with the quack of Mallard and Teal, and the whistle of Widgeon. The Shovellers were much tamer than the other species of duck, sometimes allowing approach to within twenty or thirty yards.

Dafila acuta. PINTAIL. — The Pintails were rather rarer than most of the other ducks. The long, pointed tail of the drake and graceful, swan-like neck of the female, made identification easy.

Aythya vallisneria. CANVASBACK. — This was by far the rarest duck on the lake, being only of casual occurrence. I got quite close to an old male of this species, and easily identified him. There are few finer ducks than this, the sportsman's favorite and the epicure's delight.

Erismatura dominicensis. RUDDY DUCK. — This curious little duck, so unlike the other members of the Anatidæ, shared, with the Shoveller, the honor of being the most abundant duck on the lake. No doubt there were far more Ruddies than Shovellers, but the small size and diving habits of the former render them inconspicuous.

Anser albifrons gambelii. AMERICAN WHITE-FRONTED GOOSE. — There was a large flock of these geese on the lake, numbering over a hundred. They made four regular flights daily, never varying more than fifteen minutes. It was a sight worth seeing to witness the long strings of great birds leave the lake and fly to the grain fields, ten miles away.

Chen hyperborea. SNOW GOOSE.—Although they do not spend the winter there, as do the other geese, the Snow Goose often stops for a few days on the lake. Two years ago I witnessed the alighting of a flock of these geese, that, at the lowest estimate of several persons present, numbered three or four thousand.

Branta canadensis. CANADA GOOSE.—The Canada Goose, the finest of all American waterfowl, is well represented on Elsinore Lake. At the time of my stay there was a flock of seventeen, making the same regular flights, and behaving exactly as the other geese did.

Ardea herodias. GREAT BLUE HERON.—We saw three or four of these birds during our stay, some fishing in the shallows, others soaring in great circles in the air. They were unusually wild, doubtless having been much shot at.

Recurvirostra americana. AMERICAN AVOCET.—One flock of five of these birds was observed feeding on the mud-flats. These were the only ones we saw, although given to understand that they were by no means rare.

Limosa fedoa. MARBLED GODWIT.—Our observations of this bird were confined to one specimen found dead and partly decomposed. Its long, slightly upcurved bill and brown mottled plumage at once identified it.

Tringa minutilla. LEAST SANDPIPER.—These interesting little birds were common on the shores of the lake, their shrill, piping cries and tiny bodies being in evidence everywhere.

Ægialitis vocifera. KILLDEER PLOVER.—The Killdeer were common on the south side of the lake, although I saw none on the other side. This is hard to account for, and the only reason I can give is that the south side is clean sand, instead of mud, and shelves off steeply.

Fulica americana. AMERICAN COOT.—This bird was by far the commonest on the lake, there being scarcely a hundred yards of shore without scores of 'Mud-hens,' as they are called. At some points their numbers were incredible, fairly blackening the water. — CHAS. B. NORDHOFF, *Redlands, Calif.*

RECENT LITERATURE.

Proceedings of the Nebraska Ornithologists' Union. — The Proceedings of the Second Annual Meeting of the Nebraska Ornithologists' Union, held at Omaha, Jan. 12, 1901, makes an octavo pamphlet of about one hundred pages, published at Lincoln, Nebraska, October, 1901, and forms an interesting and valuable contribution to ornithological literature. There is first an 'Abstract of Minutes' of the meeting, followed by the 'Constitution and By-laws' of the Union, and a list of its members, which number: Honorary, 4; Active, 63; Associate, 36; total, 103.

The papers read at the meeting occupy pp. 13-101, and are illustrated by 10 half-tone plates and several cuts in the text. The first paper is the President's address, by G. S. Trostler, on the 'History of Ornithology in Nebraska, and of State Ornithological Societies in General.' Concise statements are given of the founding and present status of seven State ornithological societies, including that of Nebraska, based on authentic information evidently gathered at no little trouble. This is followed by some twenty papers, mostly short, besides several pages of 'Miscellaneous Notes.' The longer papers include 'Birds in their Relation to Agriculture,' by Lawrence Bruner (pp. 18-29); 'A Late Nest of the Ruby-throated Hummingbird,' by Frank H. Shoemaker (pp. 34-38, with 3 plates); 'Young Rose-breasted Grosbeaks,' by Elizabeth Van Sant (pp. 38-42, with 5 plates); 'Birds that nest in Nebraska,' by Lawrence Bruner (pp. 48-61), a briefly annotated list of 203 species and subspecies known to breed, with a list (also annotated) of 40 others that very probably nest in the State, and a nominal list of 60 other "possible breeders." A short but very interesting paper on 'A Peculiar Disease of Birds' Feet observed in Central Nebraska' (pp. 61-63, 1 plate) is by Erwin H. Barbour. The disease especially affects the Blackbirds, and is supposed to be caused by a mite (*Sarcoptes* sp.), akin to that which produces horny excrescences about the lips and nose of wild rabbits of the same part of the State. 'Internal Parasites of Nebraska Birds,' by Henry B. Ward (pp. 63-70), is a brief discussion of the general subject, and a statement of the results of the author's investigations. Several short papers give observations on the birds of particular localities, the results of collecting trips, migration and breeding records, etc. The 'Proceedings' are, in short, made up of excellent material, well presented, and carefully edited, giving ample evidence of ability, earnestness, and enthusiasm on the part of the members of the Nebraska Ornithologists' Union. The absence of an index is the only point that seems open to criticism. — J. A. A.

Reed's 'American Ornithology.' — Mr. Chas. K. Reed's 'American Ornithology, for the Home and School' — a magazine devoted wholly to Birds'

has completed its first year¹ and reaches us as a bound volume of 246 pages, well-filled with half-tone illustrations and popular bird matter. Says the editor: "Our magazine is entirely different from anything hitherto published, in that we propose to give the life history of four or five birds each month, the illustrations of the birds being of sufficient size to be of value, and the eggs of each bird illustrated *full size*" (p. 28). The illustrations occupy usually a full page for each species, and are from original and very creditable drawings, mostly by C. K. Reed, with generally a page and a half to two pages of text, giving the bird's range, a brief description of its external characters, nest and eggs, and habits. The other matter of each number of the magazine is made up of short contributions from various writers, all of a popular character, well suited to the tastes of the beginner and the general reader, illustrated often with half-tone reproductions of photographs of birds' nests and eggs, and young birds. Many of the bird biographies are contributed articles, signed by the authors, those unsigned being doubtless by the editor. The magazine is well printed and the general make-up pleasing and attractive. It appears to be making its way in the world, and is well-deserving of favorable reception on the part of the public. — J. A. A.

Silloway's 'Summer Birds of Flathead Lake.'² — This is a well annotated list of 128 species observed in the Flathead Lake region of northern Montana, from June 14 to August 30, 1900, and in June and July, 1901. Of this number 120 species are thought to breed in this region, the other eight being presumably migrants from further north. The list proper is preceded (pp. 3-8) by a description of the topography of the region, which includes Sin-Yale-a-min Lake and McDonald Lake, in the Mission Mountains, as well as Flathead Lake; and also by 'Oölogical Notes from Flathead Lake' (pp. 9-36). These relate to 24 species found nesting in greater or less abundance at Flathead Lake, June 14 to July 5, 1900, and in many cases their nesting habits are described at considerable length. Under the heading 'Summary and Conclusions,' the author notes that the range of the long-tailed Chat (*Icteria virens longicauda*) has been traced to "beyond the middle line of the State" of Montana. He also refers to the abundance of the Western Evening Grosbeak in the immedi-

¹ American Ornithology. For the Home and School. Edited by C. Albert Reed. Vol. I. Worcester, Mass. Chas. K. Reed, publisher. 1901. — 8vo. pp. 246, copiously illustrated with half tone plates and text cuts.

² Summer Birds of Flathead Lake. By P. M. Silloway, Fergus County High School, author of 'Some Common Birds.' Prepared at the University of Montana Biological Station, under direction of Morton J. Elrod, University of Montana, Missoula, Montana, 1901. 8vo pp. 1-83, pll. i-xvi= Bulletin of the University of Montana, No. 3, Biological Series No. 1.

ate vicinity of the Biological Station, at Flathead Lake; although not found nesting, "the parent birds were generally observed feeding young of the year in the trees near the station," after about the middle of July, leading to the conclusion that the species nests later than is generally supposed. Of the sixteen half-tone plates, two illustrate the scenic features of the country at the Biological Station, near the upper end of Flathead Lake, and fourteen represent nests and eggs, including three styles of the nest of Wright's Flycatcher. The paper is a highly creditable and very welcome contribution to our knowledge of the birds of northern Montana. — J. A. A.

Shufeldt on the Osteology of Flamingoes.¹ — The skeleton of *Phenicopterus ruber* is described in detail and comparisons are made of its principal osteological characters with those of the ducks, geese, storks, ibises and herons. The conclusion is reached that the Flamingoes form "an independent group, or suborder, for which the name *Odontoglossæ* may be retained." The six plates illustrate a skeleton of *Phenicopterus antiquorum* and the skull and other parts of the skeleton of *P. ruber*. — J. A. A.

Oberholser on a Collection of Hummingbirds from Ecuador and Colombia.² — This collection, numbering 1136 specimens, representing 109 species and subspecies, was "gathered by Messrs. Claud Hamilton and Walter Goodfellow during their trip to Ecuador and Colombia in 1898 and 1899," and is now in the possession of the U. S. National Museum. The annotations include descriptions of some of the rarer forms, and the elucidation of many questions of nomenclature, and also important field notes furnished by Mr. Goodfellow. Mr. Oberholser states that with possibly one exception, this is the finest single collection of Hummingbirds ever made. Besides containing several species of great rarity, Mr. Oberholser finds in the collection one new species and three new subspecies. He also introduces several innovations in nomenclature. — J. A. A.

Bangs on a Second Collection of Birds from Chiriqui.³ — In this paper Mr. Bangs continues his account of Mr. Brown's work in Chiriqui,⁴ and

¹ Osteology of the Flamingoes. By R. W. Shufeldt, C. M. Z. S. Ann. Carnegie Museum, Vol. I, 1901, pp. 295-324, pll. ix-xiv.

² Catalogue of a Collection of Hummingbirds from Ecuador and Colombia. By Harry C. Oberholser, Assistant Ornithologist, Department of Agriculture. Proc. U. S. Nat. Mus., Vol. XXIV, pp. 309-342, No. 1258, 1902.

³ On a Second Collection of Birds made in Chiriqui, by W. W. Brown, Jr. By Outram Bangs. Proc. New Engl. Zool. Club, Vol. III, pp. 15-70. Jan. 30, 1902.

⁴ For a report on the first collection see Auk, XVIII, Oct. 1901, pp. 355-370.

covers the period from January to August, 1901. This large collection numbers about 260 species and subspecies, 12 of which are here characterized as new. "A large proportion of the mountain species," says Mr. Bangs, "are not different from the birds of the high Costa Rica mountains, although there are some striking exceptions; and the Volcan de Chiriqui is probably too near to have a mountain fauna wholly its own. Those birds that do differ usually have larger bills than their Costa Rica representatives." Although for the most part the list is a record merely of the specimens contained in the collection, with dates and localities of capture, without field notes, here and there Mr. Bangs adds technical comment on the nomenclature and relationships of some of the forms. The paper is, of course, an important addition to our knowledge of the bird fauna of this very interesting region, and great credit is due Mr. Brown for his intelligent and energetic work in gathering the material which Mr. Bangs has so discriminatingly elaborated. — J. A. A.

Seale on the Avifauna of Guam.¹ — Mr. Seale was sent to the island of Guam, one of the Mariana or Ladrone Islands, by the Bishop Museum of Honolulu to make collections of its fauna. Volume I of the 'Occasional Papers' of this Museum contains reports by Mr. Seale on the birds and fishes. The island of Guam, says Mr. Seale, "is densely wooded, except in the northwest, where there is a small range of low mountains reaching to an elevation of 1800 feet." The island is thirty-two miles long by twelve miles broad, and has a general altitude of from fifty to seventy-five feet; it has "a few small fresh water ponds and marshes, and perhaps eight to ten small streams." Mr. Seale's paper on the birds is not merely a list of the species, but is constructed on the plan of a 'hand-book,' with keys to the genera and species, as well as to the higher groups, and descriptions of the species and bibliographical references. It is intended to include all of the species known from the island, and apparently to make sure of this a few are included of doubtful or probable occurrence. Some of these have been recorded from other islands of the Mariana group, but others from points not nearer than the Samoan Islands, or merely as from "intertropical seas." In several instances included species are stated to be "not known from Guam."

The number of species formally included is 58, of which about one half appear to have been obtained by Mr. Seale, many of them in good series. There are also interesting observations on the habits of many species, and illustrations of the nests and eggs of several of them. A new species of Heron is described as *Ardetta bryani*.

The paper will doubtless prove of great use to ornithologically inclined

¹ Report of a Mission to Guam. By Alvin Seale. Part I.—Avifauna. Occas. Papers of the Bernice Pauahi Bishop Museum of Polynesian Ethnology and Natural History, Vol. I, No. 3, 1901, pp. 17–60, pll., and 6 text figures.

persons living on the island, besides forming a valuable contribution to ornithology. — J. A. A.

Mrs. Miller's 'The Second Book of Birds'.¹— Mrs. Miller's 'Second Book of Birds' ² treats briefly of twenty-eight families of the land birds of North America, beginning with the Thrushes and ending with the Vultures. Generally several typical members of each family are treated at greater or less length, their leading traits being sketched in simple language, without technicalities, the accounts being pleasantly enlivened with anecdotes of particular birds, or pairs of birds, that have come under the writer's personal observation, or derived from authentic sources. The book is thus well adapted to interest beginners in the study of ornithology, and especially to help the younger aspirants to secure some knowledge of birds and bird ways. Its influence will be eminently healthful in stimulating interest in the living bird and its welfare.

In an appendix of eight pages the characters by which the families may be distinguished are briefly given, including a few remarks on their food and habits. The twenty-four full-page plates, eight of which are colored, after designs by Mr. Fuertes, give full-length portraits of some representative species of nearly all of the families treated. Altogether the book is well designed to fill its intended rôle. — J. A. A.

Lord's Birds of Oregon and Washington.¹— Mr. Lord's little book on the birds of Oregon and Washington is a 'first book' in a double sense, it being the first formal treatise on the birds of these two States, and also a 'first book' in the sense that it is especially intended for beginners. It treats of about one hundred and fifty species, mostly the commoner land birds, excluding, however, the game birds. "The book is also limited," says the author, "in that it seeks mainly to help one to become acquainted with the birds by sight and song, leaving, for the most part, a treatment of the habits of birds, their nesting, etc., for later study." The book was prompted by the difficulties the author himself experienced in trying to

¹ The Second Book | of Birds | Bird Families | By Olive Thorne Miller | With eight colored plates from designs | by Louis Agassiz Fuertes, | and sixteen other full-page | illustrations | [Vignette] Boston and New York | Houghton, Mifflin and Company | The Riverside Press, Cambridge | 1901. — Sq. 12mo. pp. viii+210, pll. 24. Price \$1.00.

² For a notice of the 'First Book' see Auk XVI, 1899, p. 368.

³ A First Book upon the Birds of Oregon and Washington. A Pocket Guide and Pupil's Assistant in a study of the more common Land Birds and a few of the Shore and Water Birds of these States. By William Rogers Lord. Revised and enlarged edition, 1902. William Rogers Lord, Office of the J. K. Gill Company, Portland, Oregon. — 16mo, pp. 1-304 + i-iv, with 20 full-page half-tone plates. Price 75 cents.

become acquainted, in the absence of any such aid, with the birds of Oregon on first visiting the State a few years since.

The subject matter is arranged under seven chapter headings, with supplemental matter in the form of keys for identification, etc. Chapter V, 'How to name the Birds,' occupies about two thirds of the book, and contains brief 'general descriptions' of the species treated, consisting of a short summary of the external characters of each and a brief notice of its song and leading personal traits, followed by a more detailed or 'particular description' of its external appearance. The species are arranged in heterogeneous order, on the principle "mainly . . . of interest and discovery rather than the one of artificial classification"; but some offset to this disorder is furnished by the list of the species at the end of the book, where they are enumerated in the order of the A. O. U. Check-List.

This 'First Book' will undoubtedly prove a great help to those for whom it has been especially prepared, and the issue of a second "corrected and enlarged edition" within three weeks of the publication of the first, indicates that it is meeting with a cordial welcome from the bird-loving portion of the public in the States to which it relates. — J. A. A.

Witherby's 'Bird Hunting on the White Nile.'¹ — Mr. Witherby's little book is an interesting narrative of his experiences during a collecting trip to the Soudan in 1900, including an account of the country and the people as well as of the birds and mammals. The chapter on 'Camping and Collecting,' as well as that entitled 'Birds,' is especially instructive and entertaining. At the end of the book a nominal list is given of the birds collected or observed, and another of the mammals. A more extended and formal report on the birds was published in 'The Ibis' for 1901 (pp. 237-278). The chapters composing the present work were published serially in the journal 'Knowledge' during 1901, but their interest well warrants their republication in a more convenient and permanent form. — J. A. A.

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¹ Bird Hunting | on the | White Nile | a Naturalist's Experiences in the | Soudan. | By | Harry F. Witherby, | Fellow of the Zoölogical Society; Member of | the British Ornithological Union; Author of "Two Months on the Guadalquivir," etc. | London: | The Office of "Knowledge," | 326 High Holborn, 1902. — 8vo, pp. 117, with numerous half-tone illustrations. Price, 2s 6d.

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NOTES AND NEWS.

REV. GEORGE S. MEAD, an Associate Member of the American Ornithologists' Union, died June 18, 1901, at Antigua, Guatemala, at the age of 52 years. Mr. Mead was born in Racine, Wisconsin, and received his education at Racine College, graduating in 1867. After leaving college

he spent some time in traveling in the Eastern States. Afterwards he returned to his alma mater as a teacher, remaining until 1874 or 1875, when he took charge of St. Paul's school for boys in Baltimore. Later he returned to Racine College as master of the grammar school. Here he remained until the winter of 1881, when he first visited California. At intervals during fifteen years he was head-master of Trinity School of San Francisco, and in 1899 became rector of the school.

Mr. Mead had great love for travel, which he had ample opportunity to gratify. Besides visiting Europe a number of times, he made trips to Canada, Mexico, Central America, Alaska, Hawaiian Islands, and the South Seas, and at the time of his death was spending his vacation in Guatemala.

Mr. Mead was a deacon in the Episcopal Church and a member of the California Academy of Sciences and its Section of Ornithology. While he published but little on birds, he was well informed in the literature of ornithology, and had made a special study of the Birds-of-Paradise. He was also particularly interested in the birds of New Guinea.

Mr. Mead was a just man, a man of deep sympathy, of high intellectual attainments, a successful teacher. — L. M. L.

THE ANNUAL MEETING of the Delaware Valley Ornithological Club was held at the Academy of Natural Sciences, Philadelphia, January 2, 1902. The officers for the ensuing year were elected as follows: President, Charles J. Pennock; Vice-President, William A. Shryock; Secretary, William B. Evans; Treasurer, Stewardson Brown. During the year 1901 the average attendance was twenty-one, while forty-eight members were present at one or more meetings.

Among the papers presented were 'Economic Value of Hawks and Owls,' Samuel N. Rhoads; 'The Yellow-winged Sparrow in Eastern Pennsylvania,' Samuel Wright; 'Distribution of the Red-headed Woodpecker, Dr. Spencer Trotter; 'Observations on Summer Birds of Clinton and Potter County, Pa.' F. R. Cope, Jr.; 'Birds of the New Jersey Palisades,' S. N. Rhoads and W. B. Evans; 'Adirondack Notes,' C. J. Pennock; and 'Breeding of the Mockingbird in Eastern Pennsylvania,' W. E. Hannum and W. E. Roberts.

THE Sixth Annual Meeting of the Maine Ornithological Society was held at Augusta, Maine, November 29-30, 1901. The following officers were elected for the ensuing year: President, William L. Flower; Vice-President, H. L. Spinney; Secretary-Treasurer, A. H. Norton; Editor, J. Merton Swain; Councillors, A. L. Lane and Ora W. Knight. Besides the transaction of business, and the presentation of the President's Address, a number of papers were read, with numerous stereopticon illustrations. The Society voted to issue a new List of Maine Birds, to be prepared by Mr. O. W. Knight, and to include a map showing the faunal areas of the State. The Seventh Annual Meeting will be held at Portland, Maine, on "the Friday and Saturday following Thanksgiving, 1902."

WITH the number for January, 1902, 'The Osprey' entered upon its "new series," considerably altered in appearance and typographical make-up. The January number gives a biographical sketch, with portrait, of Sir John Richardson, the Arctic explorer and naturalist, by Dr. Gill, in addition to other papers of interest and several pages of reviews. In this number the editor, Dr. Gill, begins a 'General History of Birds,' forming a separately paged 'Supplement,' to be continued in monthly installments. The January installment consists of four pages, the February installment of eight pages, part of which, that relating to the "plumage of birds and their feathers," being contributed by Dr. Hubert Lyman Clark. The February number contains a portrait and a biographical sketch of Professor Alfred Newton.

'THE CONDOR' has also donned a new dress, appearing in a new cover design, "typifying the land of the setting sun and its lordly condor"! The usual high character of its contents is well sustained, as regards not only its abundant and excellent half-tone illustrations, but the text of each number forms an important addition to current ornithological literature.

THE SECOND edition of Dr. T. S. Palmer's 'Legislation for the Protection of Birds other than Game Birds,' forming 'Bulletin No. 12, U. S. Department of 'Agriculture, Division of Biological Survey,' and originally published in June, 1900, covers the changes due to legislation during 1901, and brings the subject down to January 1, 1902. The general character of this 'Bulletin No. 12,' was set forth in some detail at the time of its first appearance (cf. Auk, XVII, July, 1901, pp. 314-315); in the present edition the arrangement and general scope is the same, but the changes in the laws due to new enactments have not only been duly incorporated, but a special chapter has been added on possession and sale of birds, in which references are given to the more important recent decisions regarding the constitutionality of laws restricting the sale within a State of birds captured in other States. The supreme court of the State of California has declared that "the wild game within a State belongs to the people in their collective sovereign capacity. It is not the subject of private ownership except in so far as the people may elect to make it so, and they may if they see fit, absolutely prohibit the taking of it, or traffic and commerce in it if it is deemed necessary for the protection or preservation of the public good." The same principle has been upheld in other States, and lies at the very foundation of game and bird protection. The State hence has the right to regulate the seasons during which birds may be taken and possessed, and hence may declare contraband and confiscate birds taken contrary to law; and in such case, according to the courts, the owner "*has lost nothing that belongs to him*, and there has been no taking of property without due process of law or without just compensation."